

# 2009 University of Minnesota Combined Research and Extension Plan of Work

**Status: Accepted**  
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## I. Plan Overview

### 1. Brief Summary about Plan Of Work

This plan of work describes the goals of seventeen integrated planned programs. These programs operate as areas of expertise delivered by the University of Minnesota Extension Service and share research interests with the Minnesota Agricultural Experiment Station research. Program teams involve researchers and educators in the design, development, deliver and evaluation of educational programs grounded in research related to their priority issue. By coordinating program, business and research plans, these teams reach target audiences, evaluate stakeholder input, evaluate their work and update their program design. Working alongside these teams are administrative structures that support programs, manage stakeholders and communicate the value of the land grant system to Minnesota.

From 2009 - 2013, the University of Minnesota Extension Service and the Minnesota Agricultural Experiment Station will work together to:

- strengthen the ties between Extension and the Experiment Station;
- enhance the scholarship of programs and educators;
- strengthen connections between research, extension programming and communities' assessed needs;
- continue to analyze the outcomes and impact of programming;
- strengthen the diversity of programs and improve the cultural competence of staff; and
- increase the impact of both research and outreach through multidisciplinary research and collaborative learning partnerships.

### Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2009	367.0	0.0	456.6	0.0
2010	367.0	0.0	456.6	0.0
2011	367.0	0.0	456.6	0.0
2012	367.0	0.0	456.6	0.0
2013	367.0	0.0	456.6	0.0

## II. Merit Review Process

### 1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Internal University Panel
- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review

## 2. Brief Explanation

The Minnesota Agricultural Experiment Station engages in a scientific merit and peer review processes for all research projects. Peer review involves both reviewers internal and external to the University. This takes place within each college that receives MAES funding and under the review and approval of the college department heads and associate deans for research. Each college engages in a yearly strategic planning process to submit a "compact" that is negotiated with central administration and assures that the colleges' research and outreach goals and direction are connected with priorities.

## III. Evaluation of Multis & Joint Activities

### 1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

Each program team is responsible for a planned program regularly reviews trends, conducts new research and interviews key informants to assure that educational programs and field research are addressing issues of strategic importance. Program teams meet regularly to review the work in communities and available research. This team approach also supports the monitoring of critical issues and needs. Their review culminates in the yearly development and updating of program business plans that articulate yearly goals for program adaptation and outreach.

### 2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

During the winter of 2004, the dean and director appointed a task force to examine the status of diversity and inclusion efforts within Extension. A full report was presented in May of 2005. Nineteen recommendations were made in the areas of 1) access and representation, 2) climate and environment, 3) programs and products and 4) special initiatives.

By the end of 2006, benchmarks were set for these goals and by 2013, progress will be made in each of these areas. These benchmarks and institutional investments will affect planned programs through HR documentation, personnel assessment of cultural competence, task forces committed to improving relationships with key groups, professional development and hiring and outreach incentives.

MAES has surveyed all colleges' departments that receive funding to ascertain their processes for getting input from underserved and under-represented populations to inform their research decisions, as well as their strategies for hiring graduate research assistants to achieve more diversity.

When important to making a difference, program teams will target specific minority groups, new immigrants and other underserved audiences. Efforts to redesign programs for these targeted groups will reach underserved populations from 2008-2012. Each year, we will provide qualitative and quantitative data about service to underserved audiences.

### 3. How will the planned programs describe the expected outcomes and impacts?

We have elected to describe our CSREES planned programs around Extension's seventeen areas of expertise. These are implemented and monitored by program teams that work together to plan and enhance their program business plans yearly. This "straight line" between the research and field work and our CSREES reporting system will assure field accountability to CSREES as a key stakeholder. Benchmarks will be monitored and changed based on yearly assessments and will be incorporated into the Program Business Plans as well as the CSREES Plan of work.

### 4. How will the planned programs result in improved program effectiveness and/or efficiency?

By clustering our programs and research under areas of expertise we have created a matrix for both managing programs and evaluating their effectiveness. It is clear we have been operating for some time in an environment of increasing need from our stakeholders, and increasing complexity of research problems, while at the same time seeing no-growth or diminishing of formula funding for that work. By selecting critical issues, focusing our work and tightening the links between areas of expertise in Extension and research, we can both increase our effectiveness and also have a feedback system that tells us when to increase, decrease, or shift focus to maintain or increase efficiency.

## IV. Stakeholder Input

### 1. Actions taken to seek stakeholder input that encourages their participation

- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder groups
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Use of media to announce public meetings and listening sessions
- Targeted invitation to non-traditional stakeholder individuals

**Brief explanation.**

The University of Minnesota works hard to maintain the confidence and trust of the people, organizations and communities it serves in all regions of Minnesota. We are firmly committed to building strong relationships that bring together the knowledge, skills and abilities necessary to build capacity in individuals, geographic communities and communities of interest. Extension and MAES strive to listen carefully and to be flexible and creative in its programs, collaborating with a wide range of diverse Minnesotans to assert the position, "We know Minnesota."

Generally, Extension and MAES builds relationships with opinion leaders in government, education, agriculture, business, community organizations, the media, nonprofits, communities of interest and other opinion leaders. Targeted communications strategies build appreciation and active support. Audiences for each program receive high-quality, customized education. The appropriate technology is used to expand the reach of these programs.

**2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them**

**1. Method to identify individuals and groups**

- Use Surveys
- Use Advisory Committees
- Open Listening Sessions
- Use Internal Focus Groups
- Use External Focus Groups
- Needs Assessments

**Brief explanation.**

1. A statewide Extension Citizen Advisory Committee is convened three times a year and receives conference calls and informational reports. This committee reflects our various geographic and demographic constituencies.

2. Counties conduct yearly budget reviews, assess the past performance of local Extension positions and programs, as well as their current relevance to county priorities. They base their budget decisions on the quality and relevance of the service they receive from local positions.

3. Current program participants have their needs and satisfaction measured through post-event surveys.

4. Targeted program audiences and constituents are identified by regional educators and their needs are assessed through regular conversations, end-of-event evaluations and more formal market surveys. By deciding whether or not to partner with Extension programming, they are "voting" on the relevance and effectiveness of programs.

5. Regional educators and researchers act as an internal focus group. By forming program teams of regional educators and researchers who have relationships with key stakeholders, these stakeholders have a say in future program efforts.

6. Legislators and higher education committees are identified by university relations and Extension's government relations

department. Through personal meetings and committee presentations, Extension monitors whether the goals of the state and the voters are considered.

7. Colleges receiving MAES funding have advisory groups to inform their research decisions. This broad based input is supplemented by the stakeholder group input that individual researchers seek to provide feedback and support to their research programs.

**2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them**

**1. Methods for collecting Stakeholder Input**

- Survey of traditional Stakeholder groups
- Meeting specifically with non-traditional individuals
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with traditional Stakeholder groups
- Survey specifically with non-traditional groups
- Meeting with the general public (open meeting advertised to all)
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Meeting specifically with non-traditional groups
- Survey of selected individuals from the general public

**Brief explanation**

{NO DATA ENTERED}

**3. A statement of how the input will be considered**

- In the Budget Process
- Redirect Research Programs
- Redirect Extension Programs
- In the Action Plans
- To Identify Emerging Issues
- In the Staff Hiring Process
- To Set Priorities

**Brief explanation.**

Input from stakeholders guides program teams and administration as they design research programs, outreach plans and structures. Stakeholder input is considered when answering questions such as:

•Which stakeholders should educators work with as they conduct programming and market new research to places where it is needed? •Who is interested in our work? •How should research-based education be delivered?(Long-term consultation, workshop format, on-line courses, assessment, one-on-one consultation, mass media, web site, etc.) •What other resources do stakeholders turn to? Do these intermediaries need research-based information? Are we duplicating a service? What is our program niche? •What do stakeholders know about our programs? How do they hear about them? •Has past service and research been satisfactory? How might it be changed? •What new research should shift how we deliver programs? •What external factors have occurred which require us to change program strategies? As Extension has established program specialization, regional centers and county purchase of service, stakeholder input is more integrated into our organizational response. The extent to which programs continue, grow and evolve relies upon satisfaction, positive feedback and investment from stakeholders as well as demonstration of positive educational impacts.

Each program business plan and capacity area work plan includes input from external scans, stakeholder input and secondary data that feed the strategic planning process. It will directly influence the use of resources and the direction of research and outreach programs.

**V. Planned Program Table of Content**

<b>S. NO.</b>	<b>PROGRAM NAME</b>
1	4-H Programs in Minnesota
2	Agricultural Business Management
3	Leadership and Civic Engagement
4	Youth Work Institute
5	Family Relations
6	Family Resource Management
7	Environmental Science Education
8	Water Resource Management and Policy
9	Natural Resources Management and Utilization
10	Housing Technology
11	Food Safety Education
12	Commodity Crop Production
13	Community Economics
14	Nutrition Education Program
15	Consumer Horticulture
16	Commercial Horticulture
17	Livestock
18	Renewable Energy

**V(A). Planned Program (Summary)**

**Program #1**

**1. Name of the Planned Program**

4-H Programs in Minnesota

**2. Brief summary about Planned Program**

The 4-H Program of the University of Minnesota support three programmatic strategies that provide quality, research-based out-of-schooltime learning opportunities for youth in kindergarten through one-year post high school. Each strategy is built upon Eight Key Elements of Quality Youth Development. These three program strategies include: 1) "Adventures" programs which provide fun, short-term learning experiences that reach new audiences of youth and family meeting quality standards outlined by the Eight Key Elements of Quality Youth Development. Adventures programs also identify youth for long-term term experiences. 2) "Clubs" programs are intended to involve young people in a longer term and more intensive learning and personal development experience. 3) "Urban Youth Learn" programs provide program leaders with tools, strategies and information about multiple aspects of program planning and development so that they can become more informed participants thereby more empowered in their practices.

**3. Program existence :** Mature (More then five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
805	Community Institutions, Health, and Social Services	20%		20%	
806	Youth Development	80%		80%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

Research indicates that Minnesota has the highest percent of two-parent working families and the highest percentage of young people in self-care during non-school hours. In fact, 40% of Minnesota's 10-12 year olds are home alone after school, with 56% of children in this age group spending some time in self-care each week (Cappizzano, 2000). Non-school hours can be a time of great risk OR opportunity. Research reveals that how young people spend their free time is a more powerful predictor of risk behavior than is race, family structure or socio-economic status. The 2001 MN 4-H Youth Survey revealed that youth involved in 4-H are more likely to volunteer in their communities and less likely to smoke cigarettes, consume alcohol or ride with a driver who has, spend an unhealthy amount of time watching TV and/or playing video and computer games. They are also less likely to have stolen or damaged property. The need for productive activity is strong, and requires an individualized approach, in urban Minnesota. Sixty-five percent of students in the St. Paul Public Schools are from low-income households. The St. Paul Public School Class of 2000 had a 62% graduation rates, and rates for African-American, American Indian and Latino students were under 50%. In Minneapolis Public Schools, 65% of the students are from low-income households. The Class of 2000 graduation rate was 42%; rates for African-American, American Indian and Latino students were under 35%.

One way to positively impact the lives of urban youth is to ensure that out-of-school time opportunities are available to youth who

need them. Youth-serving organizations, public school systems, and community members need to work together to optimize the learning and development of urban youth.

**2. Scope of the Program**

- Multistate Extension
- In-State Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

Because use of out-of-school time is related to negative outcomes, positive use of out-of-school time will, ultimately, improve outcomes for youth. Trained community members and youth can deliver research-based experiences for youth. Long-term experiences are more beneficial than short-term experiences for youth, but short-term experiences can attract youth for long-term club experiences.

**2. Ultimate goal(s) of this Program**

To provide out-of-school time experiences that, by research, is connected to positive outcomes for youth.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	44.1	0.0	0.0	0.0
2010	44.1	0.0	0.0	0.0
2011	44.1	0.0	0.0	0.0
2012	44.1	0.0	0.0	0.0
2013	44.1	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

A variety of long and short-term activities conducted in counties will engage Minnesota's youth in long-term relationships and program activities that help them see their potential by:

•Learning By Doing   •Practicing Leadership   •Projects on gardening, animals, photography and much more   •Science & Arts Enrichment

•Service to Communities   •In urban areas, community partnerships will create these experiences, and will also provide youth-to-youth education that makes a difference.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Group Discussion</li> <li>● Other 2 (Youth Activities)</li> <li>● Demonstrations</li> <li>● Other 1 (train the trainer/volunteer)</li> <li>● One-on-One Intervention</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● TV Media Programs</li> <li>● Other 1 (youth activity curricula)</li> <li>● Newsletters</li> <li>● Public Service Announcement</li> <li>● Billboards</li> <li>● Web sites</li> </ul>

<ul style="list-style-type: none"> <li>● Education Class</li> </ul>					
<p><b>3. Description of targeted audience</b></p> <p>The target market for 4-H clubs is youth. In the coming five years, strategic recruitment as well as training for local club leaders, has been designed to double 4-H club membership by 2010 from 26,000 to 52,000. Through training and resources to support staff and volunteers to create quality learning environments in clubs that are inviting, accessible and welcoming to a broader range of Minnesota youth. The Urban Youth Learn audience includes adults working with schools, agencies and organizations and volunteers interested in building sustainable youth programs. Youth leadership programs targets young learners who are working in the context of their neighborhood or community to make a difference.</p>					
<p><b>V(G). Planned Program (Outputs)</b></p>					
<p><b>1. Standard output measures</b></p>					
<p><b>Target for the number of persons(contacts) to be reached through direct and indirect contact methods</b></p>					
	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>	
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	
2009	13500	6500	113000	0	
2010	13500	6500	113000	0	
2011	13500	6500	113000	0	
2012	13500	6500	113000	0	
2013	13500	6500	113000	0	
<p><b>2. (Standard Research Target) Number of Patent Applications Submitted</b></p>					
<p><b>Expected Patent Applications</b></p>					
<b>2009 :0</b>	<b>2010 :0</b>	<b>2011 :0</b>	<b>2012 :0</b>	<b>2013 :0</b>	
<p><b>3. Expected Peer Review Publications</b></p>					
<b>Year</b>	<b>Research Target</b>	<b>Extension Target</b>	<b>Total</b>		
2009	0	0	0		
2010	0	0	0		
2011	0	0	0		
2012	0	0	0		
2013	0	0	0		
<p><b>V(H). State Defined Outputs</b></p>					
<p><b>1. Output Target</b></p>					
<ul style="list-style-type: none"> <li>● Well-trained adult volunteers will work with Minnesota's young people. (Target expressed as percentage of volunteers trained in effective practices for working with 4-H youth.)</li> </ul>					
<b>2009 :85</b>	<b>2010 :90</b>	<b>2011 :95</b>	<b>2012 :95</b>	<b>2013 :95</b>	
<ul style="list-style-type: none"> <li>● Learning settings (or point of service) in 4-H will meet the essential elements that promote positive youth development. (Target expressed as scores out of 20 items on the 4-H Youth Program Survey.)</li> </ul>					
<b>2009 :17</b>	<b>2010 :17</b>	<b>2011 :17</b>	<b>2012 :17</b>	<b>2013 :17</b>	

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Youth involved in 4-H programs will demonstrate skills and knowledge on target with their youth development. (Target expressed as a percentage of 4-H youth showing appropriate skills.)
2	Youth participating in 4-H programs will demonstrate more civic engagement and volunteerism in their communities than a statewide comparison group. (Target expressed as a percentage of difference between the two groups.)
3	Youth participating in 4-H programs will be less likely to engage in risk behaviors (e.g., smoking, drinking, riding in cars with people drinking) than a comparison group of Minnesota youth. (Target expressed as an average of difference among five targeted behaviors.)

**Outcome #1****1. Outcome Target**

Youth involved in 4-H programs will demonstrate skills and knowledge on target with their youth development. (Target expressed as a percentage of 4-H youth showing appropriate skills.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :75                      2010 : 75                      2011 : 75                      2012 :75                      2013 :75

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #2****1. Outcome Target**

Youth participating in 4-H programs will demonstrate more civic engagement and volunteerism in their communities than a statewide comparison group. (Target expressed as a percentage of difference between the two groups.)

**2. Outcome Type :** Change in Action Outcome Measure

2009 :21                      2010 : 21                      2011 : 21                      2012 :21                      2013 :21

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

**Outcome #3****1. Outcome Target**

Youth participating in 4-H programs will be less likely to engage in risk behaviors (e.g., smoking, drinking, riding in cars with people drinking) than a comparison group of Minnesota youth. (Target expressed as an average of difference among five targeted behaviors.)

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :15                      2010 : 15                      2011 : 15                      2012 :15                      2013 :15

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Public Policy changes
- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Populations changes (immigration,new cultural groupings,etc.)
- Competing Programmatic Challenges
- Government Regulations
- Competing Public priorities

#### **Description**

Public commitment to youth in Minnesota is strong. However, as local government face competing demands for local tax dollars and philanthropic dollars, commitment to youth development programs fluctuate.

In order to attract and sustain involvement of new cultural groupings, 4-H programs will vary their activities for cultural appropriateness.

### **V(K). Planned Program (Evaluation Studies and Data Collection)**

#### **1. Evaluation Studies Planned**

- During (during program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- After Only (post program)
- Time series (multiple points before and after program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

#### **Description**

MN 4-H is made up of layers of local, regional and statewide programming opportunities all across the state. Given the complexity of the organization and the hundreds of program opportunities offered throughout the state, the evaluation strategies are also multi-layered. Short-term activities are typically evaluated using post-only, retrospective pre-post survey, and pre-post survey strategies. Longer term efforts will be evaluated using statewide studies. (In 2006, for example, we completed participation in the national longitudinal study of 4-H Positive Youth Development spearheaded by Tufts University. Statewide studies of a random, representative sample of 4-Hers will also be conducted to coincide with the MN Department of Education's MN Student Survey (this will offer us some ability to compare). This survey is a comprehensive impact survey designed to assess the eight keys to positive youth development, program satisfaction, and youth development outcomes such as life skills, connection to peers, family, school and community, and engagement in pro-social and risk behaviors. All clubs will continue to complete the annual "4-H Youth Program Survey" designed to assess the learning climate and critical educational processes. In addition, some clubs will participate in the Youth Program Quality Assessment (YPQA) study being conducted with partners at High/Scope Educational Research Foundation. Participant numbers are tracked yearly with 4HPlus, an enrollment software.

#### **2. Data Collection Methods**

- Sampling
- Whole population
- Observation
- Portfolio Reviews
- On-Site
- Structured

#### **Description**

See above.

**V(A). Planned Program (Summary)****Program #2****1. Name of the Planned Program**

Agricultural Business Management

**2. Brief summary about Planned Program**

Agricultural Business Management (ABM) provides farm decision-makers with knowledge about production, marketing and management that they need to improve their farming operation. ABM is also concerned for the whole Minnesota economy. ABM tracks financial performance of Minnesota farms, provides farm management information to farmers, bankers and others concerned with the future of Minnesota agriculture and develops educational programs on and off campus. ABM improves farmers' information and knowledge in areas where strategic and operational management changes can improve progress toward his/her business and family goals. The information this program provides farmers is based on MAES research that considers long-term and short-term business decisions, the impact of global markets, the opportunities of new technologies and the impacts of Minnesota's geography, and political and social landscape for farm business management.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	20%		20%	
602	Business Management, Finance, and Taxation	20%		20%	
603	Market Economics	30%		30%	
604	Marketing and Distribution Practices	20%		20%	
610	Domestic Policy Analysis	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

Farm records compiled by the University of Minnesota Department of Applied Economics consistently show a net farm income range of over \$150,000 between the most profitable and least profitable Minnesota farms each business year. As farm incomes have become more variable, the job of managing a farm has become ever more complex. Today's farm managers are managing more dollars and more people. They are often their own accountants, business analysts, market specialists, and human resource departments, as well as being production specialists. Demand for the information and events developed and

provided by ABM increases yearly largely due to the quality of its information and events. The professionals on the team have a priority to increase the information received by farmers and producers, as well as those providing inputs, services and markets to them.

Some of the primary issues Minnesota agricultural producers need to address as a result of changes in the agricultural industry and policy include: strategic positioning, transferring management capabilities, frequent performance monitoring, evaluating new technology, monitoring external factors, managing information, and accountability.

**2. Scope of the Program**

- Multistate Integrated Research and Extension
- In-State Research
- Multistate Research
- Multistate Extension
- In-State Extension
- Integrated Research and Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

If farm businesses understand the markets, and have the tools, they will market their products more successfully. They need unbiased and broad-based information to understand their opportunities in the market and be able to effectively access those opportunities.

**2. Ultimate goal(s) of this Program**

Agricultural Business Management programs will bring in-depth, research-based expertise to critical, cutting edge issues in managing farms. As a result, revenue generated by the agricultural sector in Minnesota will be optimized.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	8.9	0.0	25.8	0.0
2010	8.9	0.0	25.8	0.0
2011	8.9	0.0	25.8	0.0
2012	8.9	0.0	25.8	0.0
2013	8.9	0.0	25.8	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Through educational events, consultations and media resources, Agricultural Business Management programs will provide education about:

- agriculture tax issues
- land rent data
- machinery management
- strategic planning and business planning
- earning a living on a modern farm
- current events in agricultural business management
- special purpose technology
- ag lending
- farm business transfer and estate planning.

Research foci will be on review of policy that relates to agricultural business management, the farm bill, commodity crops and precision agriculture. Key research studies will include the following:

- Research to support improved decision-making in farm planning and financing for farmers and lenders
- Research to support improved decision-making in financing for agricultural business owners.
- Research on the economic interrelationships in both the domestic and foreign food and agricultural industries.
- Development and maintenance of an analytical support system that facilitates research and analysis on food, agricultural and trade policy issues.
- Evaluation of supply, demand and policy factors in the U.S. and abroad that influence both

short-term and long-term trade prospects and patterns. •Information to help public policy participants and decision makers evaluate issues and increase public understanding of these issues.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> </ul>	<ul style="list-style-type: none"> <li>● Other 2 (Books, Articles and Pubs)</li> <li>● TV Media Programs</li> <li>● Newsletters</li> <li>● Public Service Announcement</li> <li>● Other 1 (Software)</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

Our survey and anecdotal data has shown that Extension and Experiment Station research has a greater impact on agriculture when it directly reaches those who disseminate key information. Therefore, our target audiences for Ag Business Management programs include:

- Minnesota's farmers
- Farm business management associations
- Agricultural leaders
- Other agricultural professionals (e.g., crop consultants)
- Farm business management educators
- State and federal policy makers

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	9000	4000	0	0
2010	8900	4000	0	0
2011	8700	4000	0	0
2012	8600	4000	0	0
2013	8500	4000	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 : 1                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	15	1	0
2010	15	1	0
2011	15	1	0
2012	15	1	0
2013	15	1	0

**V(H). State Defined Outputs**

**1. Output Target**

- Educational events will deliver agricultural business management content. (Target expressed as the number of events.)

**2009** :180

**2010** :175

**2011** :170

**2012** :165

**2013** :160

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	In post-program surveys, farm owners will report increased net in farm income as a result of actions taken. (Target expressed as an average net income increase for outcomes of any program intervention.)
2	Participants of the Agriculture Business Management (ABM) program workshops/classes and conferences will achieve significant learning gains regarding research-based agriculture business management knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending ABM program workshops/classes and conferences.)
3	Participants of Agriculture Business Management (ABM) workshops/classes and conference sessions intended to improve participant agriculture business management practices will significantly improve their management practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their agriculture business management practices as a result of attending workshops/classes and conference sessions intended to improve participant management practices.)

**Outcome #1****1. Outcome Target**

In post-program surveys, farm owners will report increased net in farm income as a result of actions taken. (Target expressed as an average net income increase for outcomes of any program intervention.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :6700                      **2010** : 6700                      **2011** : 6700                      **2012** 6700                      **2013** :6700

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

**Outcome #2****1. Outcome Target**

Participants of the Agriculture Business Management (ABM) program workshops/classes and conferences will achieve significant learning gains regarding research-based agriculture business management knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending ABM program workshops/classes and conferences.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :80                      **2010** : 82                      **2011** : 84                      **2012** 86                      **2013** :86

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices
- 610 - Domestic Policy Analysis

**Outcome #3****1. Outcome Target**

Participants of Agriculture Business Management (ABM) workshops/classes and conference sessions intended to improve participant agriculture business management practices will significantly improve their management practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their agriculture business management practices as a result of attending workshops/classes and conference sessions intended to improve participant management practices.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :75                      **2010** : 77                      **2011** : 79                      **2012** 80                      **2013** :80

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices
- 610 - Domestic Policy Analysis

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Appropriations changes
- Public Policy changes
- Economy
- Competing Programmatic Challenges
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)
- Natural Disasters (drought,weather extremes,etc.)
- Competing Public priorities

#### **Description**

The Agricultural Business Management Educational content constantly adjusts to help farmers address current public policy issues, current economics and risk management for natural disasters. We expect that these matters will be constantly fluctuating and that the program will continue to be nimble in addressing those issues.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- After Only (post program)
- Time series (multiple points before and after program)

#### **Description**

Surveys are distributed six months after program delivery in order to determine how information from agricultural business management programs was used, and the impact on profitability.

### **2. Data Collection Methods**

- Sampling

#### **Description**

Surveys are distributed six months after program delivery in order to determine how information from agricultural business management programs was used, and the impact on profitability.

**V(A). Planned Program (Summary)**

**Program #3**

**1. Name of the Planned Program**

Leadership and Civic Engagement

**2. Brief summary about Planned Program**

The primary goal of leadership and civic engagement programs is to improve the quality of community-based leadership and democratic processes. With the power of effective democracies, communities can choose a future and adapt to change. Leadership and civic engagement programs have a strong track record in building leadership capacity and helping communities manage their processes. In the coming five years, the primary goals are:

- 1) to ensure that regional development efforts integrate Leadership and Civic Engagement programming;
- 2) to further strengthen evaluation processes;
- 3) to develop viable curricula that assure the replicability of sound program delivery; and,
- 4) to maintain and strengthen the research connections of the work.

Four programs currently are aligned with the leadership and civic engagement area of expertise. 1) The U-Lead program creates stronger leadership in communities. 2) The U-Facilitate program offers local residents, staff and leaders skills and experiences to enhance community-based decision-making; and 3) The U-Connect program helps communities design and implement public participation processes and become intentional in building bonds within and across communities; 4) The Connecting Rural Communities program convenes communities to talk about their technological future.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	50%		50%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	50%		50%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

According to a study of community leadership done by Cornell University and the Heartland Institute in 2002, community leaders face a number of specific and complex challenges in modern times, including:

- Doing more with less
- Mandates from above
- The currents of change and unexpected events
- Complexity of issues
- Economic realities
- Social and cultural unrest
- Loss of confidence in institutions
- Fear of personal "assassination" as

the populace scrutinizes public leadership more harshly.

How can communities address these challenges? Case study examination shows that communities succeed when they realize that, "ultimately, we have to do it ourselves." While support from state government and other outside sources can affect the lives and outcomes of community life, the primary ingredient for success is a communities' ability to make decisions -- to act together. This requires the leadership of an effective democracy.

**2. Scope of the Program**

- Multistate Extension
- In-State Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

- Leadership education is known to provide time for personal and community development as potential leaders decide what they can contribute. Providing leadership education will increase the quality and quantity of leadership in communities.
- Research-based facilitation design, delivery and education will positively change the process and product of structured gatherings in communities.
- Through training and modeling, community decision-makers can learn how to improve the quality and quantity of their engagement with those who have a stake in public decisions.
- Community-based assessments can provide revealing information that guide communities towards appropriate actions.

**2. Ultimate goal(s) of this Program**

The ultimate goal is to strengthen leadership and civic engagement systems that address problems, create positive visions, engage a wide spectrum of community members and enhance the quality of life in communities.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	11.1	0.0	0.0	0.0
2010	11.1	0.0	0.0	0.0
2011	11.1	0.0	0.0	0.0
2012	11.1	0.0	0.0	0.0
2013	11.1	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Leadership and Civic Engagement programs will use multiple interventions to improve the quality of leadership, structured gatherings and public participation processes, specifically: 1) community-based assessments, 2) workshops, 3) consultation, and 4) long-term cohort groups. Because long-term cohort groups are proven to strengthen the impact of the program, outreach efforts will encourage their implementation throughout the state.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Other 1 (Community Coaching)</li> <li>● Group Discussion</li> <li>● Other 2 (Community Assessments)</li> <li>● Demonstrations</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Other 2 (Materials dissemination)</li> <li>● Other 1 (Radio programs, newspaper articl)</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

Leadership and Civic Engagement programs reach out to five primary audiences:

- local government agencies, employees and leaders
- nonprofit organizations and collaborative associations
- foundations and their grantees
- the natural resources sector
- the agricultural sector

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	8000	5000	500	0
2010	8000	5000	500	0
2011	8000	5000	500	0
2012	8000	5000	500	0
2013	8000	5000	500	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	0	1	0
2010	0	1	0
2011	0	2	0
2012	0	2	0
2013	0	2	0

**V(H). State Defined Outputs**

**1. Output Target**

- Community cohort groups will meet to develop leadership skills and create civic connections. (Target expressed as number of cohort groups convened.)

<b>2009</b> 20	<b>2010</b> 21	<b>2011</b> :22	<b>2012</b> 22	<b>2013</b> 22
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- Community assessments and research projects will help communities understand their strengths related to civic leadership and social capital. (Target expressed as number of local assessments conducted.)

<b>2009</b> :10	<b>2010</b> :10	<b>2011</b> :10	<b>2012</b> :10	<b>2013</b> :10
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- Workshops and other structured gatherings will provide communities with increased skills, knowledge and behaviors related to leadership and civic engagement. (Target expressed as number of events.)

<b>2009</b> 200	<b>2010</b> 200	<b>2011</b> :200	<b>2012</b> 200	<b>2013</b> 200
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**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Community leadership cohort members will increase the intensity of their leadership. (Target expressed as the percentage increase in the number of leadership roles held by members of U-Lead cohort groups.)
2	U-Lead cohort members will increase leadership skills and knowledge. (Target expressed as percentage of U-Lead participants reporting pre-to-post improvement in civic engagement, community commitment, community knowledge, personal growth and self-efficacy and shared future and purpose.)
3	Structured community gatherings are more productive. (Target expressed as percentage of participants who report in follow-up surveys that participation in LCE programming led to improvements in the process and product of structured community gatherings.)
4	Findings generated from community-based social capital assessments guide communities to informed action. (Target expressed as percentage of participants who report in follow-up surveys that social capital assessment led to actions designed to strengthen trust, networks or civic engagement.)
5	Community decision-makers improve the quality and quantity of engagement with those who have a stake in public decisions. (Target expressed as percentage of participants who report in follow-up surveys that collective decision-making has effectively engaged relevant stakeholders.)

**Outcome #1****1. Outcome Target**

Community leadership cohort members will increase the intensity of their leadership. (Target expressed as the percentage increase in the number of leadership roles held by members of U-Lead cohort groups.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :42                      **2010** : 42                      **2011** : 42                      **2012** :42                      **2013** :42

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

**Outcome #2****1. Outcome Target**

U-Lead cohort members will increase leadership skills and knowledge. (Target expressed as percentage of U-Lead participants reporting pre-to-post improvement in civic engagement, community commitment, community knowledge, personal growth and self-efficacy and shared future and purpose.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :85                      **2010** : 85                      **2011** : 85                      **2012** : 85                      **2013** :85

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

**Outcome #3****1. Outcome Target**

Structured community gatherings are more productive. (Target expressed as percentage of participants who report in follow-up surveys that participation in LCE programming led to improvements in the process and product of structured community gatherings.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :85                      **2010** : 85                      **2011** : 85                      **2012** : 85                      **2013** :85

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

**Outcome #4****1. Outcome Target**

Findings generated from community-based social capital assessments guide communities to informed action. (Target expressed as percentage of participants who report in follow-up surveys that social capital assessment led to actions designed to strengthen trust, networks or civic engagement.)

**2. Outcome Type :** Change in Action Outcome Measure**2009** :40**2010** :40**2011** :40**2012** :40**2013** :40**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

**Outcome #5****1. Outcome Target**

Community decision-makers improve the quality and quantity of engagement with those who have a stake in public decisions. (Target expressed as percentage of participants who report in follow-up surveys that collective decision-making has effectively engaged relevant stakeholders.)

**2. Outcome Type :** Change in Action Outcome Measure**2009** :38**2010** :41**2011** :45**2012** :50**2013** :50**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Other (Cultural Adaptation)
- Public Policy changes
- Competing Programmatic Challenges
- Competing Public priorities

**Description**

Greater emphasis on local control and required public participation tied to government funding positively impacts demand for this programming. The LCE program teams want to create cultural adaptations of its programs to reach more Minnesota immigrants and other underserved audiences. Our evaluation targets may change in order to be more culturally appropriate.

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- Before-After (before and after program)
- Other (Educator and community reports.)
- After Only (post program)
- Retrospective (post program)
- Case Study

**Description**

Post program assessments (six months or more) will be utilized using the Community Leadership Program Survey developed by the University of Missouri. Organizations and communities who sponsor programs will be assessed through case studies and interviews.

## 2. Data Collection Methods

- Unstructured
- Other (surveys and assessments)
- Structured
- Case Study
- Observation

### Description

The Community Leadership Program Survey is an evaluation tool administered to U-Lead cohort group members after the ending of the cohort group is finished. This survey will collect data about the number of communities impacted by our leadership education and the number of skill enhancements achieved through the program.

Community planning assessments will be collected through communication and observation by the intervening Extension Educator.

**V(A). Planned Program (Summary)**

**Program #4**

**1. Name of the Planned Program**

Youth Work Institute

**2. Brief summary about Planned Program**

The Youth Work Institute provides education, research, evaluation and consultation to develop strong professionals, strong programs and a strong youth development field. The Youth Work Institute works with individuals and organizations to develop curricula responsive to community needs and to bridge research and practice that assures quality, capacity, accountability and high levels of youth participation. The Institute also collaborates with other community leaders to promote public conversation and community action that shapes public policy and builds public will on behalf of out-of-school-time learning opportunities for young people.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
805	Community Institutions, Health, and Social Services	30%		30%	
806	Youth Development	70%		70%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

Major policy initiatives in the last five years have elevated understanding of the importance of out-of-school time learning opportunities for young people. The Minnesota Mott statewide network called Youth Community Connections, the MN Commission on Out-of-School Time, and reports by the Rand Corporation and the Mott Foundation are only a few of these important reports. Many in Minnesota are committed to ensuring that all young people have opportunities to learn and develop during non-school hours. Organizations and networks are promoting a major effort to build public will in support of community youth programs. The Youth Work Institute, a part of the University of Minnesota Extension's Center for Youth Development, plays a leading role statewide in providing educational programs and public learning opportunities to build strong professionals, strong programs and a strong field.

**2. Scope of the Program**

- Multistate Extension
- In-State Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

1. While youth programs already exist, research indicates that quality is critical to the ultimate impact those programs make.

2. Youth workers benefit when they have access to current research and have an opportunity to apply it in their daily practice.

3. Community programs and organizations benefit from intentional efforts to bridge research and practice.

**2. Ultimate goal(s) of this Program**

The goal is to: a) develop competent youth work professionals; b) build strong, high-quality youth programs; and c) build a strong youth development field so that exceptional out-of-school learning opportunities are accessible and have the capacity to contribute to the positive learning and development of young people.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	12.8	0.0	0.0	0.0
2010	12.8	0.0	0.0	0.0
2011	12.8	0.0	0.0	0.0
2012	12.8	0.0	0.0	0.0
2013	12.8	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

The Youth Work Institute will organize educational activities to achieve our goals: 1) education programs and training workshops that bridge research and practice; 2) community forums and public seminars; 3) organizational partnerships and collaborations; and, 4) development of publications and educational products. All of the Institute's program activities are based on a commitment to bridge university research and community practice, to promote an asset-based youth development framework, and to promote accountability and quality in program practice.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 1 (Support for collaboratives)</li> <li>● Education Class</li> <li>● One-on-One Intervention</li> <li>● Group Discussion</li> <li>● Workshop</li> <li>● Other 2 (on-line and internet study)</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Web sites</li> <li>● Other 1 (Publications &amp; products)</li> </ul>

**3. Description of targeted audience**

The audience for Youth Work Institute programs is all persons working with and on behalf of youth. This includes those who interact with youth through community-based programming as well as decision-makers who can improve the quality and quantity of opportunities for youth to be involved in out-of-school-time activities. Examples include: youth program directors, youth workers, volunteers, teachers, coaches and parents, as well as youth program and school administrators, professionals, elected officials, voters, community collaboratives and policy makers.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	4200	7500	0	0
2010	4200	7500	0	0
2011	4200	7500	0	0
2012	4200	7500	0	0
2013	4200	7500	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	0	2	0
2010	0	2	0
2011	0	2	0
2012	0	2	0
2013	0	2	0

**V(H). State Defined Outputs**

**1. Output Target**

- Educational events will be delivered through public offerings and contracts with youth-serving organizations. (Target expressed as the number of events, classes, workshops, etc. offered.)  
 2009 :120                      2010 :120                      2011 :120                      2012 :120                      2013 :120
- The number of organizations participating in capacity building consultation and technical assistance will increase. (Target expressed as number of participating organizations.)  
 2009 :80                      2010 :85                      2011 :90                      2012 :95                      2013 :95
- Individuals representing diverse organizations will participate in networks and collaboratives supported by Youth Work Institute Staff. (Target expressed as number of organizations involved.)  
 2009 :130                      2010 :140                      2011 :150                      2012 :160                      2013 :170

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Participants at public educational offerings will report that they increased their knowledge of current research and effective program practices. (Target expressed as a percentage of participants.)
2	Youth Development organizations participating in consultation and technical assistance will report that their participation increased their ability to effectively serve youth. (Target expressed as percentage of those in agreement.)
3	Youth development professionals will report that they used Youth Work Institute products and publications to strengthen their youth programs. (Targets expressed as percentage of practitioners utilizing them.)

**Outcome #1****1. Outcome Target**

Participants at public educational offerings will report that they increased their knowledge of current research and effective program practices. (Target expressed as a percentage of participants.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :85                      2010 : 85                      2011 : 85                      2012 :85                      2013 :85

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

**Outcome #2****1. Outcome Target**

Youth Development organizations participating in consultation and technical assistance will report that their participation increased their ability to effectively serve youth. (Target expressed as percentage of those in agreement.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :80                      2010 : 80                      2011 : 85                      2012 :85                      2013 :85

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

**Outcome #3****1. Outcome Target**

Youth development professionals will report that they used Youth Work Institute products and publications to strengthen their youth programs. (Targets expressed as percentage of practitioners utilizing them.)

**2. Outcome Type :** Change in Action Outcome Measure

2009 :50                      2010 : 60                      2011 : 60                      2012 :70                      2013 :70

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)
- Competing Programmatic Challenges

**Description**

This program seeks to promote a sustained commitment to youth activities despite political trends and burning issues. However, such trends and tensions will challenge the program to achieve those goals.

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Before-After (before and after program)
- After Only (post program)
- Case Study

**Description**

1)We will utilize an on-line survey (Survey Monkey) collection process and satisfaction survey at the completion of each class.

2)Both Youth Program Quality Intervention Studyand 4-H Club Study will be evaluated pre and post with part of the survey receiving intervention programs.

3)Community partners will be interviewed for feedback on effectiveness of Community Design Teams process.

4)There will be a case study of Intercultural Education Development (IED) effort and effect.

**2. Data Collection Methods**

- Mail
- Case Study
- Observation

**Description**

Participating programs and organizations will be surveyed to establish their progress over time.

**V(A). Planned Program (Summary)****Program #5****1. Name of the Planned Program**

Family Relations

**2. Brief summary about Planned Program**

The focus of Family Relations programming is the empowerment of people through research-based information to address the social challenges facing families. MAES research examines characteristics of family systems to identify impact of environment and decision-making on quality of marriage and family life. Specific research addresses positive family development, and effective services that aim at security for the individual and family unit.

The field of parenting education build family strengths through better family communication, nurturing and respectful discipline practices, strong parent-child relationships and authoritative parenting skills. Extension's family relations programs improve the quality and quantity of parenting education through service to practitioners in the field of education, health, social services and law. This program area provides education, training and technical assistance in three areas: 1) Parents Forever encourages parents to negotiate their divorce decisions so that children have the optimum opportunity for successful development. 2) Parent education offers parents effective parenting tools and strategies that benefit families of infants, school age children, and teenagers. 3) The Families with Teens program seeks to contribute to building family strengths through improving family communication and decision making, strengthening parent-teen relationships, and increasing parental satisfaction and confidence in their parenting role during adolescence.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	100%		100%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

One-third of Minnesota families have children under the age of eighteen. Families face critical periods of transition when their parenting decisions can support, enhance, or impede their child's development. Research at the University of Minnesota focuses on how parent behaviors regarding discipline, communication, co-parenting and relationship building can best support child development. Parents receive this information in a variety of ways, depending on their learning styles, the support systems they tap in their communities, and their tendency to seek help. Therefore, finding a variety of conduits for releasing relevant information is important.

**2. Scope of the Program**

- In-State Extension
- Multistate Research
- Multistate Integrated Research and Extension
- In-State Research
- Integrated Research and Extension
- Multistate Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

•The family is the first intimate setting for the child with the family's role being to equip children with the skills and ways of understanding who he or she is. We can reasonably expect that the child will take those skills, values and understandings and apply them outside of the family.

•Parents play a central role in their children's development, and educational efforts (i.e., additional information and support) can enhance or facilitate parent behaviors that influence positive developmental outcomes in children. •Individuals in families influence each other over time and that influence runs from parent to child and from child to parent. •The context within which children develop in addition to family (neighborhoods, faith organizations, historical and social events, culture, race, ethnicity, etc.) is critical to shaping assumptions. •Positive parental behavior leads to healthy outcomes for youth and that results in positive outcomes for the larger community.

**2. Ultimate goal(s) of this Program**

The ultimate goal of our family relations programs is to see children of parents in our program grow to the optimum developmental outcomes possible. In order to reach that goal, we aspire to create health, human service and education systems where professionals are prepared to work successfully with parents.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	9.2	0.0	8.6	0.0
2010	9.2	0.0	8.6	0.0
2011	9.2	0.0	8.6	0.0
2012	9.2	0.0	8.6	0.0
2013	9.2	0.0	8.6	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Research will examine characteristics of family systems to identify the impact of environment and decision-making on quality of marriage and family life. Specific research will address positive family development, and effective services that aim at security for the individual and family unit. Research efforts include study of processes and patterns of community adaptation, acceptance of youth and frail elders and various minority groups in Minnesota, i.e. Latino/a, Hmong, Vietnamese, Native American and Somalian.

Curriculum, training and research updates will be made available to professionals in the field. Parenting education programs will be delivered through regional educators and trained partners. Research will be disseminated through publications, on-line resources, media and other resources.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Group Discussion</li> <li>● Workshop</li> <li>● Other 1 (web instruction)</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 1 (Publications)</li> <li>● Public Service Announcement</li> <li>● TV Media Programs</li> </ul>

**3. Description of targeted audience**

The program serves professionals in collaborating agencies such as mental health professionals, parent educators, schools, courts, family service agencies, health care settings and others. The program ultimately reaches parents who are divorcing, parents of adolescents and parents of pre-school and school-aged children.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	3000	45000	0	0
2010	3000	45000	0	0
2011	3000	45000	0	0
2012	3000	45000	0	0
2013	3000	45000	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	22	2	0
2010	22	2	0
2011	22	2	0
2012	22	2	0
2013	22	2	0

**V(H). State Defined Outputs**

**1. Output Target**

- Publications will be distributed.

**2009** :13000                      **2010** :13000                      **2011** :13000                      **2012** :13000                      **2013** :13000

- Professionals will be trained.

**2009** :500                      **2010** :500                      **2011** :500                      **2012** :500                      **2013** :500

- Parents will participate in Extension trainings.

**2009** :4500                      **2010** :4500                      **2011** :4500                      **2012** :4500                      **2013** :4500

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Professionals who work with parents and families will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who report knowledge gain.)
2	Parents will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who reported knowledge gain.)
3	Professionals who work with parents and families will improve their skills in working with parents and families (e.g., utilizing best practices for improving parenting skills). (Target expressed as a percentage of participants who report improving skills.)
4	Parents will improve their parenting skills. (Target expressed as percentage reporting improvement.)
5	Parents who are mandated to participate in Parents Forever because of contentious divorce situations will reduce conflict in front of their children following divorce. (Target expressed as percentage of parents who report reducing conflict.)
6	Parents mandated to participate in Parents Forever because of contentious divorce situations will increase their children's access to both parents following divorce. (The lower percentage reflects that these cases often occur where having access to both parents is not in the best interest of the children.)

**Outcome #1****1. Outcome Target**

Professionals who work with parents and families will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who report knowledge gain.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** 80                      **2010** : 80                      **2011** : 80                      **2012** 80                      **2013** :80

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #2****1. Outcome Target**

Parents will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who reported knowledge gain.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** 80                      **2010** : 80                      **2011** : 80                      **2012** 80                      **2013** :80

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #3****1. Outcome Target**

Professionals who work with parents and families will improve their skills in working with parents and families (e.g., utilizing best practices for improving parenting skills). (Target expressed as a percentage of participants who report improving skills.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** 60                      **2010** : 60                      **2011** : 60                      **2012** 60                      **2013** :60

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #4****1. Outcome Target**

Parents will improve their parenting skills. (Target expressed as percentage reporting improvement.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** 60                      **2010** : 60                      **2011** : 60                      **2012** 60                      **2013** :60

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #5**

**1. Outcome Target**

Parents who are mandated to participate in Parents Forever because of contentious divorce situations will reduce conflict in front of their children following divorce. (Target expressed as percentage of parents who report reducing conflict.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :75                      **2010** : 75                      **2011** : 75                      **2012** 75                      **2013** :75

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**Outcome #6**

**1. Outcome Target**

Parents mandated to participate in Parents Forever because of contentious divorce situations will increase their children's access to both parents following divorce. (The lower percentage reflects that these cases often occur where having access to both parents is not in the best interest of the children.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :35                      **2010** : 35                      **2011** : 35                      **2012** 35                      **2013** :35

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes

**Description**

Currently, a statute exists which makes divorce education mandatory for parents in conflict who are divorcing. If that policy changes, there would be less demand for Parents Forever, the Divorce Education program. Legislation also impacts the staffing and funding of family relations programming.An increase and decrease in staffing and funding may occur if legislative supportfor parent education changes.Influxes of new immigrants are affecting cultural adaptations of the program that need to be made. For example, in 2006 Extension was contacted by Hmong elders because the divorce rate in Minnesota's Hmong population was increasing.

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Comparisons between program participants (individuals,group,organizations) and non-participants
- After Only (post program)
- Other (Cost-benefit study)
- Retrospective (post program)

**Description**

The Family Relations program is a multi-faceted effort utilizing existing curricula, designing and implementing new curricula, providing web-based educational opportunities and other trainings to impact the delivery of services to parents and

families. Thus, the evaluation efforts must be multi-faceted as well. Depending on the life-course or the stage of program efforts, multiple outcome evaluation studies will be conducted to: 1) explore the effectiveness of achieving specific program objectives, and 2) to aggregate the results across the evaluation studies to speak to the broader impact of Family Relations programming.

## 2. Data Collection Methods

- Mail
- On-Site
- Structured
- Other (Internet-based surveys)
- Telephone
- Observation
- Unstructured

### Description

The multi-faceted nature of our program calls for a multi-method approach to data collection. The method we use will depend upon the aspect of the program being studied and the questions being addressed.

**V(A). Planned Program (Summary)**

**Program #6**

**1. Name of the Planned Program**

Family Resource Management

**2. Brief summary about Planned Program**

Family Resource Management provides Extension education on subjects such as: managing a budget, credit and debt, family business, preparation for retirement, culture and money, and teaching children about money. Sound money management is important for people of all income levels and all ages. Three programs make up the Family Resource Management area of expertise: 1) Financial Security in Later Life is a series of workplace trainings that employers can bring to their employees. 2) Resource Management for Daily Life is training for professionals and consumers to develop financial management skills in order to achieve a sense of security and financial stability. 3) Youth and Money provides education for teachers that teach teens about budgeting, income, spending, credit, debt, insurance, and the time value of money.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	90%		90%	
806	Youth Development	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

According to the National Council on Economic Education: "Americans are experiencing a major change in the way our economy works -- marked by fundamental changes in the marketplace -- outsourcing, global competition, technological change in the workplace, the uncertain future of pensions and social security. Our nation's workforce and citizenry is expected to take on increasing responsibility for their own financial future ... Financial security begins with building skills and developing practices that foster decision-making to create financial security and stability."There is evidence that the population needs more education to make its financial decisions.

•In the 2006 JumpStart survey of high school seniors, the average knowledge of personal finance questions reported a dismal 52.4% correct. With this poor understanding of personal finance, young adults enter adulthood making poorly informed choices in the areas of credit use, lending and consumer purchases. Undergraduates carry an average of three credit cards and have an average credit card debt of \$2,327. •More than 50% of working Americans have never even tried to determine how much money they need to save for retirement. •The U.S. savings rate for the first time ever has a negative balance. •The number of personal bankruptcies in the U.S. increased in 2005.New bankruptcy legislation in 2006 impacted the ease of reducing debt responsibility through personal bankruptcy. The impact of this new legislation, for individuals and households, is yet to be determined. •There has been a dramatic increase of housing foreclosures in Minnesota.In Hennepin County alone in 2006, sheriff's foreclosure sales increased 62% from the same period a year ago.

**2. Scope of the Program**

- Integrated Research and Extension
- Multistate Research
- Multistate Extension
- In-State Extension
- Multistate Integrated Research and Extension
- In-State Research

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

•Partnerships with local nonprofits, educational organizations, social service programs and financial institutions can expand the outcomes of financial literacy programming. •Some populations in need of financial literacy may be reluctant to take advantage of traditional classroom settings; therefore, creative outreach and partnership strategies should be used. •Financial literacy must be translated for language and culture so that immigrant and non-english speaking residents can take advantage of it.

**2. Ultimate goal(s) of this Program**

The ultimate goal is that families and individuals increase their wealth and financial security by making sound decisions about consumption, debt, retirement, and daily finances.

To support this goal, specific MAES research addresses families' ability to cope with financial strain and at the same time, cope with the reduction of programs and support for families. Research addresses effective services that aim at security for the individual and family unit, as well as relationships between the viability of rural family businesses and family functioning.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	12.1	0.0	3.1	0.0
2010	12.1	0.0	3.1	0.0
2011	12.1	0.0	3.1	0.0
2012	12.1	0.0	3.1	0.0
2013	12.1	0.0	3.1	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

•Practitioner workshops will be held to help partnering organizations deliver education. •Workshops and trainings will be held in community-based settings for each of the financial literacy topics. •Publications will support programming. •Media will be used to disseminate timely research and information. •Curricula will be developed and adapted for language and culture as needed.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 1 (Training of trainers)</li> <li>● Demonstrations</li> <li>● One-on-One Intervention</li> <li>● Workshop</li> <li>● Education Class</li> <li>● Other 2 (webcast and other multi-media)</li> </ul>	<ul style="list-style-type: none"> <li>● Other 2 (Publications)</li> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 1 (Radio programs, newspaper articl)</li> </ul>

**3. Description of targeted audience**

Our audiences include the following:

For youth and money:adolescents moving into independent living; teachers k-12, professional staff-credit union representatives, college staff and faculty, college students and youth.

For financial security in later life: some community non-profit groups and individuals who utilize on-line website resources and self-study modules.

For resource management for daily life programs: the general public; individuals and families who seek knowledge and skills by choice or mandate; professionals seeking to enhance knowledge; public and private agencies, organizations and businesses seeking training to enhance their delivery of resource management programs.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	6000	12000	7000	0
2010	6000	12000	7000	0
2011	6000	12000	7000	0
2012	6000	12000	7000	0
2013	6000	12000	7000	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	15	2	0
2010	15	2	0
2011	15	2	0
2012	15	2	0
2013	0	2	0

**V(H). State Defined Outputs**

**1. Output Target**

- Community-based workshops will be held for individuals and families. (Target expressed as the number of events delivered.)

**2009** :300                      **2010** 300                      **2011** :300                      **2012** 300                      **2013** :300

- Curricula and guides will be distributed.

**2009** :3000                      **2010** 3000                      **2011** :3000                      **2012** 3000                      **2013** :3000

- Training will be held for trainers in other organizations so that they can deliver education to their constituents. (Expressed as number of events.)

**2009** :100                      **2010** 100                      **2011** :100                      **2012** 100                      **2013** :100

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Individuals, families and employees who participate in Resource Management programming will report they have increased knowledge related to the targeted financial management goals. (Target expressed as a percentage of participants who report increasing knowledge.)
2	Individuals, families and employees who participate in Resource Management programming will report they have increased confidence (increased efficacy) in financial management, decision-making and planning for later life. (Target expressed as a percentage of participants who report increasing efficacy.)
3	Individuals, families and employees who participate in Resource Management programming will report they have used the knowledge/materials gained from the program to change behaviors related to targeted financial management goals. (Target expressed as a percentage of participants who reported making behavior change.)

**Outcome #1****1. Outcome Target**

Individuals, families and employees who participate in Resource Management programming will report they have increased knowledge related to the targeted financial management goals. (Target expressed as a percentage of participants who report increasing knowledge.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :60                      2010 : 60                      2011 : 60                      2012 : 60                      2013 :60

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 806 - Youth Development

**Outcome #2****1. Outcome Target**

Individuals, families and employees who participate in Resource Management programming will report they have increased confidence (increased efficacy) in financial management, decision-making and planning for later life. (Target expressed as a percentage of participants who report increasing efficacy.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :80                      2010 : 80                      2011 : 80                      2012 : 80                      2013 :80

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 806 - Youth Development

**Outcome #3****1. Outcome Target**

Individuals, families and employees who participate in Resource Management programming will report they have used the knowledge/materials gained from the program to change behaviors related to targeted financial management goals. (Target expressed as a percentage of participants who reported making behavior change.)

**2. Outcome Type :** Change in Action Outcome Measure

2009 :50                      2010 : 50                      2011 : 50                      2012 : 50                      2013 :50

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 806 - Youth Development

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Economy
- Competing Public priorities
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)
- Competing Programmatic Challenges

#### **Description**

Greater economic challenges create more of a challenge to financial literacy. (e.g., health care costs and availability, unemployment rates, costs of child care, cost of energy, cost of housing, war and rising interest rates.) Greater competition for attention to other issues in community-based institutions could decrease the amount of financial literacy training that exists. As new populations come to Minnesota, new adaptations of financial literacy program will be developed.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- Retrospective (post program)
- Time series (multiple points before and after program)

#### **Description**

Surveys for resource management for daily life will assess strengths, skills and needs of clients, recognition of effects of culture on resource management, promotion of money management skill building and sharing of best practices in financial management behavior. This data will be gathered immediately following train-the-trainer programs, within 12 months following or as an end-user summary. Youth and money programs will use end-of-event evaluation, as well as longitudinal evaluations utilizing web-based surveys.

### **2. Data Collection Methods**

- Mail
- On-Site
- Other (email, web surveys & focus groups)
- Structured

#### **Description**

Onsite data collection is used to measure retrospective knowledge/skill gain.

Web-based (Survey Monkey) surveys will collect post-event information.

Focus group interviews will be conducted to assess cultural appropriateness of curriculum adaptations.

**V(A). Planned Program (Summary)**

**Program #7**

**1. Name of the Planned Program**

Environmental Science Education

**2. Brief summary about Planned Program**

The mission of the Environmental Science Education work team is to employ the unique resources of the University of Minnesota to protect and enhance Minnesota's unique natural resources and environment through improved environmental education. ESE targets natural resource professionals, teachers and citizens who are engaged in providing environmental science education. Three programs are core to the Environmental Science Education work:

- 1) The Master Naturalist Program reaches community volunteers and citizens who can disseminate environmental science education in their communities;
- 2) Best Practices in Field Days reaches natural resource professionals and teachers to improve the quality of their environmental science offerings; and
- 3) Educational Programming for Youth on the White Earth Reservation brings environmental science education directly to Native American youth.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
135	Aquatic and Terrestrial Wildlife	20%		20%	
136	Conservation of Biological Diversity	20%		20%	
903	Communication, Education, and Information Delivery	60%		60%	
<b>Total</b>		100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

The State Plan for Environmental Education (Lederman 2000) outlines legislated goals of environmental science education, stating that citizens should 1) understand ecological systems, 2) understand cause and effect relationships between human attitudes and behavior and the environment, 3) be able to evaluate alternative responses to environmental issues before deciding on courses of action, and 4) understand the effects of multiple uses of the environment (Minn. Statute 115.073, 1998). To assess citizen's level of knowledge in these areas, the Minnesota Office of Environmental Assistance conducted a survey of adult environmental knowledge, attitudes and behavior (Murphy 2002, 2005). The major findings were that 65% of Minnesotans believe they are knowledgeable about the environment but 46% have less than average knowledge, compared to a national

pool. The task of education that connects research-based information to citizens can happen in schools, in communities and in professional settings.

**2. Scope of the Program**

- Multistate Extension
- In-State Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

1) Quality of environmental science education can be improved through connections between research-based information and key audiences. 2) The quantity of environmental science education can be increased by expanding the number of ambassadors for environmental education. 3) Environmental science education will lead to greater care and maintenance of Minnesota's ecosystems.

**2. Ultimate goal(s) of this Program**

The mission of the Environmental Science Education work team is to employ the unique resources of the University of Minnesota to protect and enhance Minnesota's unique natural resources and environment through improving environmental education.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	4.4	0.0	0.0	0.0
2010	4.4	0.0	0.0	0.0
2011	4.4	0.0	0.0	0.0
2012	4.4	0.0	0.0	0.0
2013	4.4	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Extension will improve the quality and increase the quantity of environmental science education by: 1) training teachers and field day leaders best practices for managing environmental science education programs; 2) training volunteers to deliver environmental science education in community settings; and, 3) training Native American Youth through culturally adapted summer programs.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Demonstrations</li> <li>● Other 1 (Train the trainer)</li> <li>● Workshop</li> <li>● Education Class</li> <li>● One-on-One Intervention</li> </ul>	<ul style="list-style-type: none"> <li>● Other 2 (events / conferences)</li> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 1 (electronic newsletter)</li> </ul>

**3. Description of targeted audience**

Environmental Science Education programs reach: 1) Concerned citizens and volunteers who are willing to be trained and serve in a variety of roles as citizen teachers and scientists. 2) Minnesota professionals from within Extension, the Minnesota

Department of Natural Resources, Soil and Water Conservation Districts, US Fish and Wildlife Services, Health and Human Services Departments, Environmental Sciences, the public schools and others involved in environmental science education programs. 3) Youth on the White Earth Reservation in Northwest Minnesota, when funding allows.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	600	4300	220	0
2010	600	4300	220	0
2011	600	4300	220	0
2012	600	4300	220	0
2013	600	4300	220	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

**2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	0	0	0
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	0	0	0

**V(H). State Defined Outputs**

**1. Output Target**

- Through training and other communications, volunteers, educators and natural resource professionals will be prepared to deliver research-based environmental science education programs. (Measure expressed as number of Minnesota Master Naturalist volunteers trained and supported.)

**2009 :300                      2010 :400                      2011 :450                      2012 :500                      2013 :500**

- White Earth Reservation youth will graduate from a four week summer program that includes environmental science education. (Target expressed as a percentage of students graduating.)

**2009 :75                      2010 :75                      2011 :75                      2012 :75                      2013 :75**

- Recruitment strategies for Environmental Science Education programs for adults will reach under-represented audiences. (Target expressed as a percentage of total audiences served.)

**2009 :10                      2010 :10                      2011 :10                      2012 :10                      2013 :10**

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Within a year of environmental science education instructor training (i.e., Master Naturalist and Best Practices for Field Day Trainings), educators and community-based instructors will use the research-based educational methods in environmental science education delivery. (Target expressed as a percentage of participants.)
2	Minnesotans will have increased opportunities to participate in natural history learning activities. (Target measure reflects increases in number of events available.)
3	Master Naturalists will become more knowledgeable about natural history. (Measure expressed as a percentage of knowledge gain.)
4	Native American youth will increase their academic performance on standardized achievement tests following the four week ESE program. (Target expressed as a percentage of increase.)

**Outcome #1****1. Outcome Target**

Within a year of environmental science education instructor training (i.e., Master Naturalist and Best Practices for Field Day Trainings), educators and community-based instructors will use the research-based educational methods in environmental science education delivery. (Target expressed as a percentage of participants.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :100                      **2010** : 100                      **2011** : 100                      **2012** :100                      **2013** :100

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 903 - Communication, Education, and Information Delivery

**Outcome #2****1. Outcome Target**

Minnesotans will have increased opportunities to participate in natural history learning activities. (Target measure reflects increases in number of events available.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :50                      **2010** : 50                      **2011** : 50                      **2012** :50                      **2013** :50

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

**Outcome #3****1. Outcome Target**

Master Naturalists will become more knowledgeable about natural history. (Measure expressed as a percentage of knowledge gain.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :20                      **2010** : 20                      **2011** : 20                      **2012** :20                      **2013** :20

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 903 - Communication, Education, and Information Delivery

**Outcome #4****1. Outcome Target**

Native American youth will increase their academic performance on standardized achievement tests following the four week ESE program. (Target expressed as a percentage of increase.)

**2. Outcome Type :** Change in Action Outcome Measure

2009 :5

2010 :5

2011 :5

2012 :5

2013 :5

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

**Description**

Fundraising is being done to continue some elements of environmental science education.Field Days programs and White Earth Reservations programs are contingent on such funding, and additional evaluation can be done with that funding. A change in public policy and educational priorities may challenge Extension to find partners and volunteers. Demographic shifts may change where we target our participant marketing and whether we adapt the program to reach new cultures.

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- Retrospective (post program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

**Description**

ESE evaluations will guide the direction of the projects and assess effectiveness in meeting objectives. Front-end evaluations helped to define audience and partners. Formative evaluation will be carried out during the development and early implementation phases of the programs (2006 - 2010) and results will inform and refine programs. The dominant features of our evaluations are:

1) assessing participants' achievements, including potential to impact large numbers of people through volunteer and professional activities;

2) assessing impact on volunteers and professionals;

3) assessing the quality of materials. We will use a mixed-methods approach (Greene & Caracelli 2002) including surveys, observations, interviews and expert panels and including stakeholders at all levels.

**2. Data Collection Methods**

- Structured
- Observation
- Tests
- Portfolio Reviews
- Case Study
- Whole population

**Description**

{NO DATA ENTERED}

**V(A). Planned Program (Summary)**

**Program #8**

**1. Name of the Planned Program**

Water Resource Management and Policy

**2. Brief summary about Planned Program**

MAES research is designed to develop a systematic, comprehensive and scientific approach for addressing agricultural profitability and non-point source pollution reduction in the Minnesota River basin.

Extension water resource management programs deliver education and consultation with community members, professionals and local institutions so that they are better stewards of Minnesota's water. Water Resource Management programs include three core programs:

- The stormwater education program assists local government in protecting and improving water resources by improving urban land use decision-making, improving stormwater practices and educating residents about new clean water practices.
- The Shoreland Education program provides information, practical experience and resources for people interested in implementing or promoting shoreland stewardship so that they can improve shoreland water quality; and
- The Onsite Sewage Treatment Program actively promotes the use of decentralized sewage treatment methods to provide wastewater treatment for rural areas and small communities.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	25%		25%	
133	Pollution Prevention and Mitigation	30%		30%	
403	Waste Disposal, Recycling, and Reuse	25%		25%	
605	Natural Resource and Environmental Economics	20%		20%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

Minnesota waters are part of the state's identity, pride, and a focal point of much of its tourism industry. Research and education focuses on the agricultural impacts on our lakes and rivers, and addressing other threats and challenges such as invasive species. The Minnesota River, for example, is considered one of the 20 most endangered waterways in America.

Pollution from controllable human-made sources are an obstacle to keeping Minnesota's waters fishable and swimmable.

The pressure on water resources is growing, as the number of homes on Minnesota lakes grew 74% from 1967 to 1982. After assessing 14% of the state's lakes and 8% of the state's rivers, the Minnesota Pollution Control Agency's Impaired Waters Program found 37% of the lakes and 40% of the rivers to be impaired. The State of Minnesota has responded with requirements that, for example, local units of government reduce stormwater pollution and control how sewage treatment is done and maintained. However important this legislation is, it is the decisions that homeowners, landowners and small communities make that will improve the quality of water. Additionally, since 1997 the US EPA has been actively promoting the use of decentralized sewage treatment methods to provide wastewater treatment for rural areas and small communities. Communities and individuals can use research-based education and consultation as they make the decisions that will create safer water in Minnesota.

**2. Scope of the Program**

- In-State Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension
- Multistate Extension
- Multistate Research
- In-State Research

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

- Pollution prevention requires an educational process in which those who manage land learn new methods and approaches.
- Property owners care about the quality of the water around them and want to maintain a pollution-free community.
- Changing the norms, rules and behavior of community members will have an effect on pollution control.
- Professionals need high-quality education in order to be updated in new research about their work.

**2. Ultimate goal(s) of this Program**

To maintain and improve the quality of Minnesota's waters and the health of Minnesota residents.

Research goals:

- Develop a framework for describing and taking inventory of characteristics of the Minnesota River basin that affect non-point source pollution, agricultural management practices and their potential for reducing non-point source pollution.
- Develop an inventory for research on the risk associated with adopting crop management practices that can reduce non-point source pollution.
- Develop agroforestry practices that mitigate non-point pollution problems.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	9.7	0.0	27.0	0.0
2010	9.7	0.0	27.0	0.0
2011	9.7	0.0	27.0	0.0
2012	9.7	0.0	27.0	0.0
2013	9.7	0.0	27.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Research will be conducted and best practices developed in order to be able to:

- Provide land management / water quality education, stormwater management practice assessment, and local government

stormwater education and support. •Provide education and consultation for professionals, small communities and homeowners about how to provide and maintain sewage treatment. •Provide education, practical experience and resources about how to protect and improve the shoreland, environment and lake/stream water quality.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Group Discussion</li> <li>● Demonstrations</li> <li>● Other 1 (consultations)</li> <li>● One-on-One Intervention</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Other 1 (Publications)</li> <li>● Web sites</li> <li>● Newsletters</li> <li>● Other 2 (DVDs)</li> </ul>

**3. Description of targeted audience**

Communities likely to use the storm water education program are those within the Twin Cities' third tier of urban development, communities in Minnesota's lake districts and the western Lake Superior Basin. We will reach those communities through local government and elected and appointed officials and their staffs. Local government engineers and planners, consulting engineers, planners and architects are also targeted as they help communities make decisions that impact Minnesota's waters. Homeowners are a key audience -- whether they be shoreland property owners, lake association members, the horticulture industry, volunteer groups, or owners of on-site septic systems. Professionals are also a key audience as their professions interface with the water resources. These include natural resource professionals, real estate professionals, the hospitality industry or professionals who have access to homes and communities with on-site sewage treatment programs.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	12000	15000	650	0
2010	12000	15000	650	0
2011	12000	15000	650	0
2012	12000	15000	650	0
2013	12000	15000	650	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	69	0	0
2010	69	0	0
2011	69	0	0
2012	69	0	0
2013	69	0	0

**V(H). State Defined Outputs**

**1. Output Target**

- Provide useful information about shoreland, storm water and septic system management into web links, printed products and media. (Target expressed as numbers of products created per year.)

**2009** 20                      **2010** 20                      **2011** 20                      **2012** 20                      **2013** 20

- Workshops, seminars, and presentations will educate community members and professionals about strategies that provide wastewater treatment for their community at a reasonable cost in a way that is consistent with community values. (Target expressed as number of events.)

**2009** 85                      **2010** 85                      **2011** 85                      **2012** 85                      **2013** 85

- Provide workshops on water quality, stormwater issues and shoreland management, revegetation and use of plants to maintain shoreland structures. (Target expressed as number of events.)

**2009** 30                      **2010** 30                      **2011** 30                      **2012** 30                      **2013** 30

- Coordinate shoreline demonstration projects that provide hands-on learning opportunities and add to educational goals.

**2009** 3                      **2010** 3                      **2011** 3                      **2012** 3                      **2013** 3

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Local decision-makers will know: 1) Where stormwater goes; 2) Major stormwater pollutants and their impact and 3) Three things they can personally do to prevent pollution. (Measure expressed as percentage of residents in targeted communities.)
2	Workshop participants will use information from shoreland education programming to provide education to 25 additional people, creating a multiplier effect. (Target expressed as a percentage of workshop participants.)
3	Shoreland education workshop participants will practice one or more of five lake/river friendly landscaping behaviors. (Target expressed as a percentage of workshop participants.)
4	Homeowners will modify or change their habits regarding home water and product use to better protect their on-site septic systems. (Measure expressed as a percentage of those evaluated.)
5	Small communities will develop a viable plan for onsite sewage treatment--plans that are affordable and address onsite sewage treatment. (Target expressed as number of communities per year.)

**Outcome #1**

**1. Outcome Target**

Local decision-makers will know: 1) Where stormwater goes; 2) Major stormwater pollutants and their impact and 3) Three things they can personally do to prevent pollution. (Measure expressed as percentage of residents in targeted communities.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :80                      **2010** : 80                      **2011** : 80                      **2012** 80                      **2013** :80

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation

**Outcome #2**

**1. Outcome Target**

Workshop participants will use information from shoreland education programming to provide education to 25 additional people, creating a multiplier effect. (Target expressed as a percentage of workshop participants.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :50                      **2010** : 50                      **2011** : 50                      **2012** 50                      **2013** :50

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation

**Outcome #3**

**1. Outcome Target**

Shoreland education workshop participants will practice one or more of five lake/river friendly landscaping behaviors. (Target expressed as a percentage of workshop participants.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :50                      **2010** : 50                      **2011** : 50                      **2012** 50                      **2013** :50

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation

**Outcome #4**

**1. Outcome Target**

Homeowners will modify or change their habits regarding home water and product use to better protect their on-site septic systems. (Measure expressed as a percentage of those evaluated.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**60                      **2010 :**60                      **2011 :**60                      **2012 :**60                      **2013 :**60

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse
- 605 - Natural Resource and Environmental Economics

**Outcome #5**

**1. Outcome Target**

Small communities will develop a viable plan for onsite sewage treatment--plans that are affordable and address onsite sewage treatment. (Target expressed as number of communities per year.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009 :**3                      **2010 :**3                      **2011 :**3                      **2012 :**3                      **2013 :**3

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation
- 403 - Waste Disposal, Recycling, and Reuse
- 605 - Natural Resource and Environmental Economics

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Competing Public priorities
- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

If the regulations that mandate planning and education for stormwater runoff and onsite treatment change, communities will no longer have an incentive to engage in this programming. As population changes happen in communities, the types of education delivered requires cultural and language relevance. Weather extremes may change the program priorities when they influence lakes and streams.

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Case Study
- After Only (post program)
- Retrospective (post program)

**Description**

Evaluation will be at two levels: awareness surveys made of residents to see if program goals were met, and direct interviews with local government staff to see if the water resource programs provided are useful and effective.

## 2. Data Collection Methods

- Telephone
- Mail
- Unstructured
- Sampling

### Description

Shoreland education evaluation will use self-assessment on surveys six - nine months after workshop delivery. The On-site Sewage Treatment Program will conduct follow-up evaluations 3 - 6 months after a program to assess changes made by participants, retention of learning and community progress.

**V(A). Planned Program (Summary)**

**Program #9**

**1. Name of the Planned Program**

Natural Resources Management and Utilization

**2. Brief summary about Planned Program**

Research in natural resources sponsored by MAES is carried out in forest resources, fisheries and wildlife and conservation biology. Other departments addressing natural resources issues include entomology; plant pathology; horticulture; plant biology; soil, water and climate; and applied economics.

Extension programs in Natural Resource and Management Utilization (NRMU) help citizens, landowners and natural resource professionals make well-informed decisions that affect the economic, social and ecological sustainability of their natural resources now and for future generations. NRMU programs address issues on forested, agricultural and urban landscapes. Educational programs are delivered through workshops, demonstration sites, publications, citizen-to-citizen training, and the Internet.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
123	Management and Sustainability of Forest Resources	50%		50%	
124	Urban Forestry	25%		25%	
125	Agroforestry	15%		15%	
133	Pollution Prevention and Mitigation	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

Minnesota's 17 million forested acres provide timber, wildlife, recreation, wilderness, watershed protection, and biological diversity to the state. Through the forest products and tourism industries, those forests contribute substantially to the state's economy. About one-half of the commercial forest land is privately owned. Policy makers, forest landowners, loggers, natural resource managers, farmers and urban dwellers make decisions every day that directly affect the use, management and protection of Minnesota's trees and forests. Accurate, authoritative, scientific and technical information should be the basis for their decisions. Emerging priorities include: sustainable forest management on family forest lands; expanding agroforestry opportunities; production of biofuels; control of exotic, invasive pests; wildfire damage reduction; tree planting and maintenance on urban lands and farmsteads for energy conservation and environmental benefits; and extending the useful life of wood

products in service.

**2. Scope of the Program**

- Multistate Research
- Multistate Integrated Research and Extension
- Integrated Research and Extension
- In-State Research
- Multistate Extension
- In-State Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

Broad adoption of innovative, research-based strategies is necessary to address the priority issues. Engaged citizens can both inform the process and implement strategies that address priority issues. Private lands change ownership frequently, requiring continual education of new landowners.

**2. Ultimate goal(s) of this Program**

Extension goals:

The goals of Natural Resource and Management Utilization programs are that future generations have full access to healthy and abundant natural resources. This will be accomplished by working toward the following Extension goals:

- Family forests will be managed sustainably.
- Landowners will diversify and increase income from agroforestry crops and biofuels.
- The spread rate and ecological impact of exotic, invasive pests will be reduced.
- Greater energy conservation and increased environmental benefits will be achieved on urban lands and farmsteads.
- Wood products will be chosen and used by consumers and builders to maximize their useful life.

Research goals:

- Improve understanding of factors affecting forest composition, diversity and function
- Improve understanding of northern Minnesota forest ecosystems and develop improved management techniques
- Investigate the biology and control of forest microbes and determine their importance to forest health and sustainable ecosystem functioning
- Better understand the decisions that affect the integrity and biological diversity of the ecosystem, and linkages between biosphere, microclimate and global climate

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	7.1	0.0	91.2	0.0
2010	7.1	0.0	91.2	0.0
2011	7.1	0.0	91.2	0.0
2012	7.1	0.0	91.2	0.0
2013	7.1	0.0	91.2	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

MAEs research, including field and laboratory studies and computer modeling, will be conducted to achieve the research goals described earlier.

New research and education will be delivered to key audiences through face-to-face workshops, master volunteer programs, print and digital publications, multi-media, newsletters, conferences, community events and the Internet. Extension NRMU program business plans will address the issues of forest, agricultural and urban landscapes. NRMU programs cover a

wide range of topics including forest ecology, silviculture, invasive species, timber harvesting, timber and non-timber forest products, wildlife management, recreation, urban forestry, windbreak and shelterbelt development.

Evaluation activities for these programs are likely to begin in 2009.

## 2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Demonstrations</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Other 1 (publications)</li> <li>● Other 2 (dvds and cd-roms)</li> <li>● Web sites</li> </ul>

## 3. Description of targeted audience

Primary audiences: Farmers and woodland owners, loggers, wood processors and marketers; natural resource and green industry professionals; volunteer educators; and local and state government personnel engaged in forestry, parks and recreation, soil and water conservation. Secondary audiences include investors, crop consultants and youth.

### V(G). Planned Program (Outputs)

#### 1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	1750	12000	1000	0
2010	1750	12000	1000	0
2011	1750	12000	1000	0
2012	1750	12000	1000	0
2013	1750	12000	1000	0

#### 2. (Standard Research Target) Number of Patent Applications Submitted

##### Expected Patent Applications

2009 :1

2010 :0

2011 :0

2012 :0

2013 :0

#### 3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2009	70	4	0
2010	70	4	0
2011	70	4	0
2012	70	4	0
2013	0	4	0

**V(H). State Defined Outputs**

**1. Output Target**

- Workshops, tours, and demonstration projects will increase awareness of landowners, volunteers, loggers, natural resource professionals and businesses involved in forestry, agroforestry, urban forestry and forest products. (Target expressed as the number of events.)

<b>2009</b> :190	<b>2010</b> :190	<b>2011</b> :190	<b>2012</b> :190	<b>2013</b> :190
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- Print and digital publications will provide answers to questions about sustainable management of Minnesota's natural resources. (Target expressed as number of publications distributed.)

<b>2009</b> :10000	<b>2010</b> :10000	<b>2011</b> :10000	<b>2012</b> :10000	<b>2013</b> :10000
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**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Landowners will implement new forestry, agroforestry and urban forestry management practices. (Target expressed as number of acres on which new land management was improved.)
2	Landowners that implement new management practices will improve management of a significant number of acres. (Target expressed as number of acres on which management was improved.)
3	Natural resource-based businesses will become more profitable. (Target expressed as dollars earned or saved by natural resources enterprises.)

**Outcome #1****1. Outcome Target**

Landowners will implement new forestry, agroforestry and urban forestry management practices. (Target expressed as number of acres on which new land management was improved.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :300                      **2010** : 300                      **2011** : 300                      **2012** :300                      **2013** :300

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 133 - Pollution Prevention and Mitigation

**Outcome #2****1. Outcome Target**

Landowners that implement new management practices will improve management of a significant number of acres. (Target expressed as number of acres on which management was improved.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :18000                      **2010** : 18000                      **2011** : 18000                      **2012** :18000                      **2013** :18000

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 133 - Pollution Prevention and Mitigation

**Outcome #3****1. Outcome Target**

Natural resource-based businesses will become more profitable. (Target expressed as dollars earned or saved by natural resources enterprises.)

**2. Outcome Type :** Change in Condition Outcome Measure

**2009** :30000                      **2010** : 30000                      **2011** : 30000                      **2012** :30000                      **2013** :30000

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 125 - Agroforestry

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Appropriations changes
- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Government Regulations

#### **Description**

Changes from natural disasters, economy or government regulations could affect the content of educational programs we offer.Changes in appropriations affect staffing and funding levels necessary to conduct educational programs. Land use issues created by growing economies can create conflicts with stewardship of forest environments.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- Retrospective (post program)

#### **Description**

We will conduct after-program evaluations, pre-and-post tests, and surveys of program participants several months after certain events.Depending on the program, we will count numbers of program participants that increase their awareness, number of participants who gain knowledge, number of landowners that implemented at least one new land management practice, numbers of acres on which management was improved, and dollars earned or saved in natural resource enterprises.

### **2. Data Collection Methods**

- Telephone
- Unstructured
- Sampling
- On-Site
- Mail
- Observation
- Tests

#### **Description**

We will:count direct contacts in programs to measure awareness; use pre-and post-tests or after program evaluations to determine the number of participants that gained knowledge; survey a sample of participants by mail or telephone several months after an event to document management practices implemented, acreage impacted and dollars earned or saved.

**V(A). Planned Program (Summary)**

**Program #10**

**1. Name of the Planned Program**

Housing Technology

**2. Brief summary about Planned Program**

The Housing Technology Program of the University of Minnesota Extension Service delivers courses and provides the tools that secure good air quality in new homes, or mitigates problems in existing homes. Educational partners come from government, industry and non-profit organizations. Together, these courses identify the extent and cause of the major structural and environmental problems in housing. This serves housing professionals so that they can ensure the quality of new and existing homes to their customers. This also helps the housing consumer/investor be better informed on home-buying decisions.

MAES research supporting outreach education on housing in developing new knowledge and understanding of building systems.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	100%		100%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

A host of home air pollutants can impair the health of residents, creating asthma, allergies, bronchitis, carbon monoxide poisoning, lead poisoning, and more. Examples of harmful housing substances include asbestos, biological contaminants, chemicals, combustion pollutants, lead, mold, and radon. Maintaining and building durable, healthy and affordable housing requires knowledgeable housing professionals and conscientious home buyers.

**2. Scope of the Program**

- Multistate Extension
- In-State Extension
- Integrated Research and Extension
- In-State Research

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

Public policy alone cannot assure indoor air quality. Creating a culture of knowledge and action about air quality among both buyers and sellers will improve the quality of Minnesota's housing stock.

**2. Ultimate goal(s) of this Program**

To mitigate health risks through the reduction of indoor environmental risks, while improving the quality and durability of Minnesota's housing stock.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	1.3	0.0	2.6	0.0
2010	1.3	0.0	2.6	0.0
2011	1.3	0.0	2.6	0.0
2012	1.3	0.0	2.6	0.0
2013	1.3	0.0	2.6	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Courses will be offered in Minnesota and across the United States in partnership with the building industry and its constituents. Ongoing research will continue to increase the quality and quantity of these educational opportunities. The following topics are core to our Housing Technology Programs: Indoor Air Quality in Residential Settings; Moisture Control and Mold; Radon Measurement, Radon Mitigation, and custom courses on new and emerging subjects.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 1 (certifications)</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Web sites</li> <li>● Newsletters</li> </ul>

**3. Description of targeted audience**

The overall target audience for this information is builders, remodelers, contractors, mitigators and others involved with avoiding and resolving problems in homes.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	600	2500	0	0
2010	600	2500	0	0
2011	600	2500	0	0
2012	600	2500	0	0
2013	600	2500	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

**2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	0	1	0
2010	0	1	0
2011	0	1	0
2012	0	1	0
2013	0	1	0

**V(H). State Defined Outputs**

**1. Output Target**

- Educational courses will be delivered to the target audiences.

**2009 :65                      2010 :65                      2011 :65                      2012 :65                      2013 :65**

- New research will result in the development of new and revised educational materials. (Target expressed as the number of new or revised curriculum materials.)

**2009 :1                      2010 :1                      2011 :1                      2012 :1                      2013 :1**

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Improve the durability of new homes by working with builders. (Target expressed as the number of builders trained.)
2	Improve the availability of healthy and affordable housing through the mitigation of indoor environmental risks. (Target expressed as number of homes affected.)

**Outcome #1****1. Outcome Target**

Improve the durability of new homes by working with builders. (Target expressed as the number of builders trained.)

**2. Outcome Type :** Change in Condition Outcome Measure

**2009** :30                      **2010** : 30                      **2011** : 30                      **2012** 30                      **2013** :30

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

**Outcome #2****1. Outcome Target**

Improve the availability of healthy and affordable housing through the mitigation of indoor environmental risks. (Target expressed as number of homes affected.)

**2. Outcome Type :** Change in Condition Outcome Measure

**2009** :1000                      **2010** : 1000                      **2011** : 1000                      **2012** :1000                      **2013** :1000

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Public Policy changes
- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)
- Government Regulations
- Natural Disasters (drought,weather extremes,etc.)

**Description**

Natural disasters could increase or change the amount of content that needs to be provided. If government regulations no longer support the program in giving incentive to builders to make homes safe, the market for the program could decrease. Population changes will generate a demand for programming in additional languages.

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- After Only (post program)

**Description**

Evaluation of program is done collaboratively with the housing industry, which indicates whether standards are being addressed and that they are in compliance with government regulation as a result of educational inputs.

**2. Data Collection Methods**

- Portfolio Reviews
- Journals
- Case Study
- Unstructured
- Tests
- Whole population
- Sampling
- Telephone
- On-Site
- Mail
- Structured
- Observation

**Description**

Evaluation of program is done collaboratively with the housing industry, which indicates whether standards are being addressed and that they are in compliance with government regulation as a result of educational inputs.

**V(A). Planned Program (Summary)**

**Program #11**

**1. Name of the Planned Program**

Food Safety Education

**2. Brief summary about Planned Program**

The mission of Food Safety education is to provide research-based food safety education to Minnesota food service establishments, non-profit community events, schools, processing facilities, care facilities, homes and home-based businesses and to increase the safety of food products grown, caught, prepared or preserved in Minnesota. This is being accomplished through: 1) Food Safety Certification programs for Food Services; 2) Food Safety Training for food handlers; 3) Food Safety Education through distributed materials to the general public and 4) Development and coordination of training and inspection for food industry personnel.

Research to support these outreach programs investigate food production and processing practices, food safety and food quality issues.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	40%		40%	
503	Quality Maintenance in Storing and Marketing Food Products	30%		30%	
504	Home and Commercial Food Service	30%		30%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

An average of 39 foodborne outbreaks occur every year in Minnesota, involving more than 600 persons. Fifty percent of the food dollar is spent on meals prepared by the food service industry. The majority of foodborne outbreaks in Minnesota is related to improper handling in these food service situations. Emerging trends to which the food service industry must adapt include food allergies, food irradiation and foodborne illness. In community based and care settings, similar concerns arise with less professional resources available for trainings and standards for food preparation.

**2. Scope of the Program**

- Multistate Extension
- Multistate Integrated Research and Extension
- Integrated Research and Extension
- Multistate Research
- In-State Research
- In-State Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

Interventions in public food service settings will control the conditions under which food borne illnesses occur. For-profit and non-profit food service settings benefit from becoming trained in food service because the reputations of their institutions and industry will be strengthened. The general public seeks information about food safety from timely, responsive mediums rather than workshop or certification settings.

**2. Ultimate goal(s) of this Program**

The ultimate goal is to prevent foodborne illnesses and assure the safety of food preparation in food service settings.

Research goals include:

- Create the basic knowledge to permit the food industry to develop safe and flavorful food products
- Reduce incidence of pathogens by incorporating natural anti-microbials in ready-to-consume foods
- Reduce food spoilage by using naturally occurring chemicals from edible plants.
- Optimize product quality by evaluating food component interactions
- Increase understanding of the structural characteristics that proteins bring to food products.
- Develop a polymer science approach to study lipid replacement in cereal-based systems.
- Evaluate the farm to table movement of food and determine where contamination may occur.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	9.2	0.0	11.6	0.0
2010	9.2	0.0	11.6	0.0
2011	9.2	0.0	11.6	0.0
2012	9.2	0.0	11.6	0.0
2013	9.2	0.0	11.6	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Research will be conducted to meet the applied and basic research goals outlined under "Ultimate Goals." Research into the development of new products, processes and storage conditions is included under this program.

Food Safety for Food Service: Face-to-face and on-line courses will be delivered, resulting in examination and certification of food service workers. In 2006, Extension reported that cultural and language adaptations had made certification of Spanish-speaking food service workers more successful. Renewals of this certification will be offered and the course will continue to be offered in Spanish. In the coming years, cultural adaptation for other immigrant groups are likely. Food Safety Employee and Volunteer training: Face-to-face education in food service settings and community settings will deliver food safety training to those who handle food. The public will have education available about food safety in the home through media campaigns, phone answering services, the web, fact sheets and workshops. A train the trainer format will also be offered, especially to those local community organizations that can reach high risk audiences with food safety information.

The Inspection Division Project: A contract for services will provide a 3/4 time educator to develop and coordinate training for

inspection and food industry personnel.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 1 (Train-the-trainer)</li> <li>● Education Class</li> <li>● Demonstrations</li> <li>● One-on-One Intervention</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Other 2 (CDDVDs)</li> <li>● Web sites</li> <li>● Public Service Announcement</li> <li>● TV Media Programs</li> <li>● Newsletters</li> <li>● Other 1 (answering lines)</li> </ul>

**3. Description of targeted audience**

Research supports the food development industry and food processing industry, while the direct audiences of the outreach efforts are food service workers through relationships with the National Restaurant Association, food handlers in community locations, fishermen and farmers, and high-risk audiences through the organizations they trust.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	1600	7400	0	0
2010	1650	7400	0	0
2011	1700	7400	0	0
2012	1750	7400	0	0
2013	1800	7400	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	0	0	0
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	0	0	0

## V(H). State Defined Outputs

### 1. Output Target

- On-line and face-to-face classes will be delivered for food service workers in English. (Target expressed as number of courses offered.)

<b>2009</b> 67	<b>2010</b> 69	<b>2011</b> :70	<b>2012</b> :72	<b>2013</b> :74
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- Content for food service professionals will be translated into Spanish and other languages and adapted for the cultural orientations for related participants. (Target indicates number of courses available in languages other than English.)

<b>2009</b> 4	<b>2010</b> 5	<b>2011</b> :6	<b>2012</b> 6	<b>2013</b> 7
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**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Participants of the Food Safety program classes will achieve significant learning gains regarding research-based food safety knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Food Safety classes.)
2	Participants of the Food Safety program classes intended to improve participant horticulture practices will significantly improve their food safety practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their food safety practices as a result of attending classes intended to improve food safety practices.)
3	The MN Dept. of Health reports an 18-20% decrease in inspection critical violations in establishments that employ a Certified Food Manager. Food Safety Education programs will certify food managers. (Target expressed as % of pass rates.)

**Outcome #1****1. Outcome Target**

Participants of the Food Safety program classes will achieve significant learning gains regarding research-based food safety knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Food Safety classes.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :70                      2010 : 72                      2011 : 74                      2012 :76                      2013 :78

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 504 - Home and Commercial Food Service

**Outcome #2****1. Outcome Target**

Participants of the Food Safety program classes intended to improve participant horticulture practices will significantly improve their food safety practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their food safety practices as a result of attending classes intended to improve food safety practices.)

**2. Outcome Type :** Change in Action Outcome Measure

2009 :65                      2010 : 67                      2011 : 68                      2012 :70                      2013 :72

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 504 - Home and Commercial Food Service

**Outcome #3****1. Outcome Target**

The MN Dept. of Health reports an 18-20% decrease in inspection critical violations in establishments that employ a Certified Food Manager. Food Safety Education programs will certify food managers. (Target expressed as % of pass rates.)

**2. Outcome Type :** Change in Condition Outcome Measure

2009 :95                      2010 : 95                      2011 : 95                      2012 :95                      2013 :95

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 504 - Home and Commercial Food Service

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)

#### **Description**

If regulations become lax for foodservice establishments, incentive to engage in certification may decrease. As population demographic change the "where and how" of public food service situations may need adjustment in program planning.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Comparison between locales where the program operates and sites without program intervention
- After Only (post program)
- Other (Inspection documents)

#### **Description**

Besides data collection, we plan to study program adaptations for new audiences to determine the cultural appropriateness of our program adaptations. Once program interventions are considered effective because of post-program evaluation, their outcomes will be measured through means similar to data collection for other programs.

### **2. Data Collection Methods**

- Other (Inspection documents)
- Tests
- Mail

#### **Description**

The Life Skills evaluation system is used. Questions are selected from the groupings developed by the Extension Service. Analysis of material learned and behaviors changed is measured by pre- and post-class evaluations. For certification programs, a follow-up evaluation is sent to participants to determine the continuing influence of materials presented. Evaluation of facilities by MDH or MDA inspectors will be collected from inspection scores, which are public domain. Data primarily will be searched for changes in compliance at inspections done after facility personnel have completed training. Improved inspection scores, fewer violations and a decrease particularly in critical violations would be measures of success. Data are also collected from Certified Food Managers renewing their certification through Serve it Up Safely in the classroom setting. The percentage making significant changes to decrease the incidence of foodborne illness outbreaks is tabulated, along with specific practices put in place. These evaluations will determine whether Food Safety Education programs are making a difference.

**V(A). Planned Program (Summary)**

**Program #12**

**1. Name of the Planned Program**

Commodity Crop Production

**2. Brief summary about Planned Program**

The Commodity Crop Production program focuses on the development and delivery of timely research information transfer and sound agronomic production principles. This research accelerates the adoption of production practices that increase profitability and reduce risks that face commodity crop producers in Minnesota. Production capacity and efficiency and crop protection are major factors supporting Minnesota crop productivity. Minnesota producers seek ways to minimize their inputs in the areas of pesticides and fertilizers by adopting new crop technologies, diversifying their crops, minimizing soil erosion with less tillage operations, and taking advantage of new alternative crop markets. New technologies, including plant transformation, genomics, and computer-assisted biology will help provide the necessary tools needed to understand and later modify plants for improved production characteristics.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	20%		20%	
205	Plant Management Systems	20%		20%	
206	Basic Plant Biology	10%		10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
212	Pathogens and Nematodes Affecting Plants	10%		10%	
213	Weeds Affecting Plants	10%		10%	
216	Integrated Pest Management Systems	10%		10%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

The primary commodity crops produced in Minnesota are corn, small grains (spring wheat, barley and oats) and soybean. These crops produce approximately \$3 billion in cash receipts to Minnesota farmers, contributing economically to Minnesota's rural communities and to the state as a whole. Another important commodity crop in Minnesota is sugar beets. Minnesota ranks first nationally in sugar beet production, raising 460,000 acres annually. The annual economic benefits from the beet sugar industry in Minnesota-North Dakota include \$1.1 billion in direct impacts plus another \$2 billion in secondary impacts.

#### 2. Scope of the Program

- Multistate Extension
- Multistate Research
- Integrated Research and Extension
- Multistate Integrated Research and Extension
- In-State Research
- In-State Extension

### V(D). Planned Program (Assumptions and Goals)

#### 1. Assumptions made for the Program

A balanced approach toward commodity, industry and regulatory partners is necessary to maintain programmatic funding and our competitive position. The biggest challenge to the Commodity Crops program is how to efficiently and effectively integrate across county, regional and state levels of programming to best serve the commodity crop producers who farm these 17 million

acres of land each growing season.

**2. Ultimate goal(s) of this Program**

The ultimate goal of this program is to accelerate the adoption of production practices that increase profitability and reduce economic and environmental risks that face commodity crop producers in Minnesota. Research components seek to:

- Identify and overcome constraints to crop production. •Focus on soil health, tillage systems, crop rotations, pest management and decision support systems that will accelerate the adoption of research results on farms by demonstrating the benefits of research in terms of the whole farm. •Enhance the health and safety of producers and pesticide applicators.
- Develop efficient crop production and sustainable cropping systems. •Create discoveries in germplasm development, genetic transformation and the development and application of molecular markets --crop improvement for the introduction of new genes to increase resistance to pests and diseases; and improvement of productivity and crop quality,. •Develop new approaches for breeding and genetic improvement using molecular technologies.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	11.9	0.0	149.9	0.0
2010	11.9	0.0	149.9	0.0
2011	11.9	0.0	149.9	0.0
2012	11.9	0.0	149.9	0.0
2013	11.9	0.0	149.9	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Research will be conducted to achieve the goals outlined under "Ultimate Goals."Note that KA 201 Plant Genome, Genetics and Genetic Mechanisms, and KA 206 Basic Plant Biology, will be used to report mainly MAES research activities and outcomes in this joint report, while other KAs will be used to discuss both Extension and Experiment Station results and impact. Within this planned program, both basic and applied research activities will focus on a broad range of efforts to support the viability and success of Minnesota's crop producers, including such emerging opportunities as biomass, alternative crops and response to new pests and pathogens.

Crop production programming will:

- Offer research based educational opportunities to Ag Professionals •Produce regional events for crop producers on topics such as pest management, fertility, health and safety, and production practices. •Produce publications and support materials, both online and hard copy. •Do applied research on production practices.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

The primary audience are the producers of corn, soybean, small grains and sugar beets. The secondary audience is the

consultants who have commodity crop producers as their customers.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	48000	20000	3000	0
2010	47900	20000	2950	0
2011	47800	20000	2900	0
2012	47700	20000	2850	0
2013	47600	20000	2800	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

Expected Patent Applications

2009 :2                      2010 :2                      2011 :2                      2012 :2                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	120	10	0
2010	120	10	0
2011	120	10	0
2012	120	10	0
2013	0	10	0

**V(H). State Defined Outputs**

**1. Output Target**

- Conduct regional and local events to provide producers with latest applied research for improved crop management. (Target expressed as number of events)

2009 :690                      2010 :670                      2011 :650                      2012 :630                      2013 :610

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Participants of the Crops program workshops/classes and conferences will achieve significant learning gains regarding research-based crops knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Crops program workshops/classes and conferences.)
2	Participants of Crops workshops/classes and conference sessions intended to improve participant crops practices will significantly improve their crops practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their crops practices as a result of attending workshops/classes and conference sessions intended to improve participant crop practices.)

**Outcome #1****1. Outcome Target**

Participants of the Crops program workshops/classes and conferences will achieve significant learning gains regarding research-based crops knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Crops program workshops/classes and conferences.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

<b>2009</b> 80	<b>2010</b> : 82	<b>2011</b> : 84	<b>2012</b> 86	<b>2013</b> :88
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**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

**Outcome #2****1. Outcome Target**

Participants of Crops workshops/classes and conference sessions intended to improve participant crops practices will significantly improve their crops practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their crops practices as a result of attending workshops/classes and conference sessions intended to improve participant crop practices.)

**2. Outcome Type :** Change in Action Outcome Measure

<b>2009</b> 50	<b>2010</b> : 52	<b>2011</b> : 54	<b>2012</b> 56	<b>2013</b> :58
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**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Competing Programmatic Challenges
- Public Policy changes
- Economy
- Natural Disasters (drought,weather extremes,etc.)
- Appropriations changes
- Government Regulations
- Competing Public priorities

#### **Description**

Adjustments to both the research and outreach work of the program will be necessary in response to all of the above listed external factors, some of which are more predictable than others in an increasingly large-scale and global environment. Crop producers are affected by changes in government regulations, the economy and, as always, the weather.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- After Only (post program)
- Retrospective (post program)
- Case Study
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- During (during program)
- Comparison between locales where the program operates and sites without program intervention

#### **Description**

Evaluation of events will include post program studies and comparison studies. Evaluation of on-farm studies will include comparison and case studies. Input from producers, crop scientists and specialists and the agricultural input industry will be used each year to enhance and improve the program.

### **2. Data Collection Methods**

- Observation
- On-Site
- Case Study
- Sampling

#### **Description**

Evaluation of events will include post program studies and comparison studies. Evaluation of on-farm studies will include comparison and case studies. Input from producers, crop scientists and specialists and the agricultural input industry will be used each year to enhance and improve the program.

**V(A). Planned Program (Summary)**

**Program #13**

**1. Name of the Planned Program**

Community Economics

**2. Brief summary about Planned Program**

Community economics programming informs community decision-makers, through research-based information, so that they can mobilize the community to address the economic change and challenges facing them. Specific research addresses taxation, the relationship of supply and demand for housing in rural communities, understanding family businesses as a vehicle for economic development, and improving the management skills of small business owners relative to business structures, product development and market evaluation.

Community Economics outreach programs deliver education, local assessments and discussions as decision-makers plan for the future of their economy and public finance options. Programs include technology literacy programs, customer service training in communities, business retention and expansion programs, retail analysis and development, public finance education programs, tourism development and certificate in festival and event management. Each of these programs informs local decisions and builds on strengths of local economies.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
602	Business Management, Finance, and Taxation	33%		33%	
608	Community Resource Planning and Development	67%		67%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

Economic opportunities and challenges in both rural and urban areas depend significantly on the health of existing businesses, on the availability of affordable housing, and on the organization, delivery and finance of local government services. To remain healthy and viable, businesses in rural communities increasingly need information about local labor markets and employment trends, and assistance in market evaluation, new product development, and improved small business decision-making. Suburban and urban communities also need to examine their competitiveness and their role in Minnesota's new regional economy. All communities must address the quality of life for businesses and for the workforce during demographic shifts.

Many communities strive to build a strong economic future, but rely too much upon "guess work" to inform their ideas. Our priority is to strengthen the information base from which local leaders act, and to encourage them to develop a plan for their community's future. Minnesota communities are challenged to cope with shifts that develop from changing industries, global markets, regionalization of the retail sector, and increased pressure on local governments to provide for their needs. As these shifts occur, local decision-makers need to learn, research, plan and act for the future of the community.

**2. Scope of the Program**

- Multistate Research
- Multistate Extension
- In-State Research
- Multistate Integrated Research and Extension
- Integrated Research and Extension
- In-State Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

Actions on the part of the entire community can affect the success of individual businesses in that community. Research-based information can inform community action.

**2. Ultimate goal(s) of this Program**

The goal of our community economics programs is improved local decisions based upon high quality information and effective research and Extension education on topics of business and industry climate, tourism and public finance issues.

MAES research to support the understanding of community economics focuses on public policy, state and local taxation impacts and the state of Minnesota's economy and the challenges facing local communities and local governments.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	9.0	0.0	9.3	0.0
2010	9.0	0.0	9.3	0.0
2011	9.0	0.0	9.3	0.0
2012	9.0	0.0	9.3	0.0
2013	9.0	0.0	9.3	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Research will be conducted to assess impact of public policies, the impact of change on rural, suburban and urban communities and businesses as well as community and business challenges and opportunities related to demographic changes, housing, and tourism.

Work in communities is achieved through the efforts of Extension Educators and campus Extension staff, researchers at the Department of Applied Economics, the Department of Housing, Design and Apparel, and the staff of the University of Minnesota Tourism Center. Extension educators deliver workshops in communities, conduct and deliver applied research at the community level, connect communities to university researchers and deliver skills trainings in the areas of customer service and internet education. Research is disseminated through a variety of web, publication and community-based education vehicles.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Education Class</li> <li>● Other 1 (Research and Summary Reports)</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Other 2 (on-line courses)</li> <li>● Web sites</li> <li>● Other 1 (newspaper articles)</li> </ul>

**3. Description of targeted audience**

Primary audiences for community economics programs include chambers of commerce, the tourism industry, economic development officers, local governments, and nonprofits that can, in turn, support local economic development efforts.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	10000	34000	0	0
2010	10000	34000	0	0
2011	10000	34000	0	0
2012	10000	34000	0	0
2013	10000	34000	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	16	1	0
2010	16	1	0
2011	16	1	0
2012	16	1	0
2013	16	1	0

**V(H). State Defined Outputs**

**1. Output Target**

- Educational workshops will be provided (face-to-face and on-line). (Target expressed as numbers of workshops.)

2009 240                      2010 240                      2011 :240                      2012 240                      2013 240

- Community-based applied research will be conducted regarding retail trade, business retention and expansion and tourism development. (Target expressed as numbers of communities engaged.)

**2009** :10                      **2010** :10                      **2011** :10                      **2012** :10                      **2013** :10

- Community-based trainers will be trained to continue providing education in communities through business retention and expansion programming, customer service training and internet literacy programs. (Target expressed as the numbers of trainers trained.)

**2009** :90                      **2010** :90                      **2011** :90                      **2012** :90                      **2013** :90

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Participants in Community Economics programs will increase their knowledge of relevant community economic development topics. (Target expressed as the percentage of participants reporting increased knowledge.)
2	Participants in long-term programs (Business Retention and Expansion, Tourism Development, Connecting Rural Communities) will contribute to new plans for local economic development. (Target expressed as a percentage of participants in long-term programs initiated in prior three years who report that participation in Community Economics programming led to creation of new plans.)
3	Communities engaged in long-term programs (Business Retention and Expansion, Tourism Development, Connecting Rural Communities) will report that plans developed as a result of Community Economics programming were implemented to the betterment of their local economies. (Target expressed as a percentage of communities in long-term programs initiated in prior three years who report that participation in Community Economics programming led to creation of new plans). Note: Communities could be those of place (geographic) or those of interest (industry or sector-based.)

**Outcome #1****1. Outcome Target**

Participants in Community Economics programs will increase their knowledge of relevant community economic development topics. (Target expressed as the percentage of participants reporting increased knowledge.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :80                      **2010** : 80                      **2011** : 80                      **2012** :80                      **2013** :80

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

**Outcome #2****1. Outcome Target**

Participants in long-term programs (Business Retention and Expansion, Tourism Development, Connecting Rural Communities) will contribute to new plans for local economic development. (Target expressed as a percentage of participants in long-term programs initiated in prior three years who report that participation in Community Economics programming led to creation of new plans.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :60                      **2010** : 60                      **2011** : 60                      **2012** : 60                      **2013** :60

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development

**Outcome #3****1. Outcome Target**

Communities engaged in long-term programs (Business Retention and Expansion, Tourism Development, Connecting Rural Communities) will report that plans developed as a result of Community Economics programming were implemented to the betterment of their local economies. (Target expressed as a percentage of communities in long-term programs initiated in prior three years who report that participation in Community Economics programming led to creation of new plans). Note: Communities could be those of place (geographic) or those of interest (industry or sector-based.)

**2. Outcome Type :** Change in Condition Outcome Measure

**2009** :50                      **2010** : 50                      **2011** : 50                      **2012** : 50                      **2013** :50

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)
- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

#### **Description**

Economies shift with a myriad of external forces, including economic shifts which can challenge or support local businesses, government regulations that affect tax bases or support one industry over another, and population changes that can drain communities of their population base or create influxes. All of these changes require communities to act on new information, and so challenges research and Extension to respond.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- Retrospective (post program)
- Case Study
- After Only (post program)

#### **Description**

Post-program evaluations will determine whether knowledge was gained. Phone and one-on-one "check-ins" will gather information about community planning efforts. Longitudinal follow up will assess the success of local planning.

### **2. Data Collection Methods**

- Telephone
- Mail
- Structured
- Unstructured
- On-Site

#### **Description**

Data will be collected through post-program written surveys and one-on-one phone interviews with community leaders who are in touch with community actions and outcomes.

**V(A). Planned Program (Summary)****Program #14****1. Name of the Planned Program**

Nutrition Education Program

**2. Brief summary about Planned Program**

The Extension Nutrition Education Program (NEP) provides nutrition education to audiences of low-income persons and professionals who serve low-income persons. Extension's NEP program includes the Food Stamp NEP (FSNE), the Expanded Food and Nutrition Education Program (EFNEP), and a University funded program. The FSNE and EFNEP programs focus on diet quality, food safety, food resources management and food security. These have been designed to reach specific target populations ranging from pregnant mothers to children in Head Start to elders. Through the University of Minnesota Extension Service, the FSNE and EFNEP programs directly reach individuals in 85 of Minnesota's 87 counties. Educational programs are designed and delivered to youth, adults and seniors. Programs developed for adults and seniors focus on changing learned behaviors related to food purchase and consumption. Youth programs are based on the premise that learning healthful eating habits during childhood will play a role in the prevention of nutrition-related disease, the program not only works to change individuals' knowledge and/or behaviors, but are designed to support systemic change. The University supports a related program for school food service workers and managers to improve the healthfulness of food service programs in Minnesota public schools. All three aspects of Minnesota's NEP are based on research on the impact of the education provided to children and the impact of the education provided to children and the impact of access to food on the healthful eating of families.

Minnesota Agricultural Experiment Station research focuses on issues of food consumption for optimal health, food chemicals in processing and storage, and product characteristics of foods grown in the midwest. Dietary research focuses on the relationship between cholesterol oxidation and its protection against heart disease, diabetes and cancer, on measuring the physiological effects of dietary fiber, investigating foods that help in the treatment for diabetes, the potential of phyto-estrogens as cancer preventatives, developing new sources of dietary antioxidants and fibers, understanding the link between fat, salt and hypertension, and on a variety of dietary influences of colon cancer.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	5%		5%	
701	Nutrient Composition of Food	25%		25%	
703	Nutrition Education and Behavior	60%		60%	
704	Nutrition and Hunger in the Population	10%		10%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

Nutrition and optimal food intake is a fundamental physical building block and important to the well being of Minnesotans. Research has established the link between adequate nutrition in the early years and adult productivity, between adequate nutrition and risks of disease and disability, and between adequate nutrition education and nutritional intake.

In the U.S., \$92.6 billion annual costs are related directly to obesity-related health concerns. One-half of these costs are covered directly by tax dollars via Medicare and Medicaid. More than half of all Minnesotans are considered to be obese or overweight (61%), putting them at risk for heart disease, stroke, certain cancers and type two diabetes, all of which are among the leading causes of death. For Minnesota, the cost of obesity is \$1.3 billion dollars with \$227 million of this going into Medicaid population care. A comprehensive approach addresses not only individual behavior change, but environmental and systemic change as well. According to the Centers for Disease Control, during the past twenty years, obesity among adults and children has risen significantly, resulting in a host of poor health conditions. In 2004, in excess of 260,000 Minnesotans are certified as eligible for Food Stamps. Assuming 61% have weight problems, over 150,000 Food Stamp participants need nutrition education for this alone.

#### 2. Scope of the Program

- Multistate Extension
- Multistate Integrated Research and Extension
- In-State Research
- Multistate Research
- Integrated Research and Extension
- In-State Extension

### V(D). Planned Program (Assumptions and Goals)

#### 1. Assumptions made for the Program

Healthful eating habits in childhood play a role in the prevention of chronic under-nutrition and acute nutrition problems throughout their lives. The development of healthful eating habits as a child can serve as a basis for adult dietary behaviors. Consumers will increase their healthful behaviors through adequate information, tools and motivation. Individuals benefit from an environment that reinforces changes to more healthful food selections and more nutritious food choices. In Minnesota, 16 percent of the population is estimated to lack adequate food each day.

#### 2. Ultimate goal(s) of this Program

Through a comprehensive approach to change individual level decisions and environmental change, Minnesotans will make decisions that will enhance their health and well-being.

Research goals to support these decisions include:

- Determining optimal food consumption for health of colon, reducing cardiovascular disease, cancer and diabetes,

- Determining the physiological effects of various dietary fibers, and
- Analyzing the loss of food chemicals in processing and storage.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	17.5	0.0	15.6	0.0
2010	17.5	0.0	15.6	0.0
2011	17.5	0.0	15.6	0.0
2012	17.5	0.0	15.6	0.0
2013	17.5	0.0	15.6	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Efforts will include:

•Deliver educational programs to individuals in groups or one-to-one settings regarding diet quality, food safety, food resource management and food security; •Develop and implement a series of trainings for school food service personnel throughout Minnesota; and

•Evaluate the effectiveness of nutrition education programs.

In addition, a series of research projects will explore:the impact of nutrition education on children and the impact of access of food on families; impact of healthy beverage consumption, and the food shopping behavior of low-income families. In addition, MAES research will be conducted to develop better understanding of the nutritional content and health benefits of various foods, as well as developing methods to help the food processing industry provide healthy food.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Education Class</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Public Service Announcement</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

•Children, parents and other adults from low-income families. •Professionals who work with low-income families. •School food service workers and managers seeking assistance in implementing federal regulations and improving healthful food choices of children.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	22330	1456600	29500	69700
2010	22330	1485691	29500	71100
2011	22330	1515400	29500	72500
2012	22330	1515400	29500	72500
2013	22300	1515400	29500	72500

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

**2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	27	0	0
2010	27	1	0
2011	27	1	0
2012	27	1	0
2013	0	1	0

**V(H). State Defined Outputs**

**1. Output Target**

- Classes will be provided in individual and group settings that teach about diet quality, food safety, food resource management and food security. (Target expressed as number of workshops/classes taught.)

**2009 :3075                      2010 :3075                      2011 :3075                      2012 :3075                      2013 :3075**

- School Food Service Institutes will be held for school food service workers and managers so that they implement healthy food service programs for Minnesota's public schools. (Target expressed as number of institutes held each year.)

**2009 :12                      2010 :12                      2011 :12                      2012 :12                      2013 :12**

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	An increased number of individuals will use research-based information from Extension to improve their intake of healthful foods. (Target expressed as percentage of participants who self-report change.)
2	Food service personnel will use research-based information from Extension to improve students' healthy eating. (Target expressed as percentage of workshop participants reporting use of materials.)
3	Program participants will increase human nutrition knowledge. (Target expressed as percentage of participants who report knowledge change.)
4	Program participants will increase their skills in selecting and buying food that satisfies nutritional needs, managing food budgets and preparing affordable foods within the food groups. (Target expressed as percentage of participants who reported learning these skills.)

**Outcome #1****1. Outcome Target**

An increased number of individuals will use research-based information from Extension to improve their intake of healthful foods. (Target expressed as percentage of participants who self-report change.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :50                      **2010** : 50                      **2011** : 50                      **2012** :50                      **2013** :50

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #2****1. Outcome Target**

Food service personnel will use research-based information from Extension to improve students' healthy eating. (Target expressed as percentage of workshop participants reporting use of materials.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :50                      **2010** : 50                      **2011** : 50                      **2012** :50                      **2013** :50

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #3****1. Outcome Target**

Program participants will increase human nutrition knowledge. (Target expressed as percentage of participants who report knowledge change.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :75                      **2010** : 75                      **2011** : 75                      **2012** :75                      **2013** :75

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**Outcome #4****1. Outcome Target**

Program participants will increase their skills in selecting and buying food that satisfies nutritional needs, managing food budgets and preparing affordable foods within the food groups. (Target expressed as percentage of participants who reported learning these skills.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :50                      **2010** : 50                      **2011** : 50                      **2012** :50                      **2013** :50

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Public Policy changes
- Appropriations changes
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)
- Competing Public priorities
- Economy
- Government Regulations

#### **Description**

Changes in the economic status of families and institutions, such as schools, can positively or negatively affect how much an individual or institution can invest in behavior change. Greater or lesser emphasis on health and nutrition can enhance or decrease the effectiveness of our approach. Changes in population can affect who is targeted by the program and whether cultural adaptations may be needed.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Comparisons between program participants (individuals,group,organizations) and non-participants
- Time series (multiple points before and after program)
- Before-After (before and after program)
- Retrospective (post program)

#### **Description**

We have invested in a new evaluation specialist to conduct both formative and summative evaluations for the Nutrition Education program.In addition to continuing to assess post workshop knowledge gain and intent to utilize program knowledge and materials, we will be designing and implementing a control group study to explore the impact of the Nutrition Education Program.

### **2. Data Collection Methods**

- Structured
- Unstructured
- Telephone
- Sampling
- Mail
- On-Site

#### **Description**

Multi-method approaches will be used to collect data.The specific methods will depend upon the aspect of the program being studied and the questions to be addressed.Typically, on-site surveys and structured interviews will be utilized to collect the data.

**V(A). Planned Program (Summary)****Program #15****1. Name of the Planned Program**

Consumer Horticulture

**2. Brief summary about Planned Program**

Information flows from the University to horticulture consumers through several pathways. Research-based written materials and audio-visual materials are available to consumers through Extension and horticulture department web sites and the Extension distribution center. University faculty work with and provide education for green industry personnel who interact directly with consumers. The primary method -- face-to-face and direct response to consumer questions about home horticulture and environment -- delivered through University-trained Master Gardener volunteers. The University is seen as a premier source for homeowner horticulture and environmental information, with a strong community-based presence as well as presence in the mass media. Faculty research is closely tied to this effort.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%		10%	
132	Weather and Climate	10%		10%	
205	Plant Management Systems	60%		60%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
213	Weeds Affecting Plants	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

The National Gardening Survey suggests that more than half of the citizens of the state of Minnesota are involved in some form of activity that is defined as horticultural. This means that some 2.5 million people are performing gardening and landscaping activities and are potential consumers of university-based horticulture information. Technological advances have increased both the number of sources of as well as the pathways to horticultural information. Consumers have many choices as to where and how they get their horticultural information. Therefore, multiple mediums for delivery of this information is the best way to reach the audiences we seek and who seek this research-based information. We focus our educational efforts in consumer horticulture

in four areas:

- answering consumer questions; •educating consumers on best practices in horticulture and plant health care;
- addressing issues and practices specific to homeowners' impact on environmental issues of water quality; and, •using horticulture education activities to increase the engagement of youth and new audiences in Extension programs.

## 2. Scope of the Program

- Multistate Extension
- Multistate Research
- In-State Research
- Multistate Integrated Research and Extension
- In-State Extension
- Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

Most consumers of horticulture information work from the paradigm of needing timely answers to questions. Other consumers want to build their basic knowledge in horticulture, and are willing to become expert disseminators of that information in their communities. Still others need to know critical information about horticulture and environmental practices that impact their lives and their communities.

### 2. Ultimate goal(s) of this Program

Our efficient, effective and customer-responsive delivery of research-based information will lead to adoption of sound home horticulture and environmental practices that enhance the quality of life for individuals and add value for the public good.

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	2.1	0.0	0.7	0.0
2010	2.1	0.0	0.7	0.0
2011	2.1	0.0	0.7	0.0
2012	2.1	0.0	0.7	0.0
2013	2.1	0.0	0.7	0.0

## V(F). Planned Program (Activity)

### 1. Activity for the Program

MAES research activities that benefit consumers also benefit our commercial horticultural industry. The activities that will be conducted include development of hardy plants for the northern gardener as well as development of techniques and technologies to support gardening in Minnesota.

Consumer horticulture programs will be delivered in two ways. First, products and services will deliver time-sensitive, responsive information to consumers who want answers to questions. This includes the development and dissemination of written materials, audio-visual materials, web sites, and telephone answer desks. Second, products and services will build horticultural knowledge in communities through University-trained Master Gardeners. They will deliver this information through a variety of venues based on local needs and situations. The Master Gardener groups will collaborate and partner with other community and University groups (e.g., Research and Outreach Centers, Soil Conservation Districts, Community Garden Associations, etc.) in developing and delivering programs.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Demonstrations</li> <li>● Other 1 (Training of trainers)</li> <li>● Group Discussion</li> <li>● Workshop</li> <li>● Education Class</li> <li>● One-on-One Intervention</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Public Service Announcement</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

From the large group of horticultural information consumers, two distinct audiences have been selected to be reached with specially designed programs. Audience #1 is people who need horticultural information where time is a factor. This portion of our audience seeks answers to questions and want a timely response. For this audience, we will provide problem-specific information with as little "friction" as possible. Audience #2 is people who want to build, or whom we seek to build, basic knowledge in horticulture and environmental stewardship. For these audiences, there are opportunities for in-depth classes and/or longer-term educational experiences.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	124000	51000	5000	0
2010	124500	51000	5000	0
2011	125000	51000	5000	0
2012	125500	51000	5000	0
2013	126000	51000	5000	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :0                      2012 :0                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	4	1	0
2010	4	1	0
2011	4	1	0
2012	4	1	0
2013	4	1	0

**V(H). State Defined Outputs**

**1. Output Target**

- Master Gardeners trained by Extension will deliver hours of educational service to the residents of Minnesota. (Target expressed as the number of volunteer hours committed by Master Gardeners.)

**2009** :103000

**2010** :103100

**2011** :103200

**2012** :103300

**2013** :103400

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Participants of the Consumer Horticulture program clinics/classes will achieve significant learning gains regarding research-based horticulture knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Consumer Horticulture program clinics/classes.)
2	Participants of the Consumer Horticulture program clinics/classes and conference sessions intended to improve participant horticulture practices will significantly improve their horticulture practices as a result of attending the clinics/classes. (Target expressed as a percentage of participants that significantly changed one or more of their horticulture practices as a result of attending clinics/classes intended to improve horticulture practices.)

**Outcome #1****1. Outcome Target**

Participants of the Consumer Horticulture program clinics/classes will achieve significant learning gains regarding research-based horticulture knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Consumer Horticulture program clinics/classes.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2009** :60                      **2010** : 62                      **2011** : 64                      **2012** 66                      **2013** :68

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 132 - Weather and Climate
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 213 - Weeds Affecting Plants

**Outcome #2****1. Outcome Target**

Participants of the Consumer Horticulture program clinics/classes and conference sessions intended to improve participant horticulture practices will significantly improve their horticulture practices as a result of attending the clinics/classes. (Target expressed as a percentage of participants that significantly changed one or more of their horticulture practices as a result of attending clinics/classes intended to improve horticulture practices.)

**2. Outcome Type :** Change in Action Outcome Measure

**2009** :40                      **2010** : 44                      **2011** : 48                      **2012** 52                      **2013** :56

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 132 - Weather and Climate
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 213 - Weeds Affecting Plants

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Competing Public priorities
- Natural Disasters (drought,weather extremes,etc.)

**Description**

The content of Consumer Horticultural programs is responsive to current seasons, state of weather and climate. The program changes as these factors change. Population changes affect the type of outreach we do, focused on seeking audiences who reflect the diversity of our population.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Case Study

#### **Description**

{NO DATA ENTERED}

### **2. Data Collection Methods**

- Sampling
- Case Study
- Mail

#### **Description**

{NO DATA ENTERED}

**V(A). Planned Program (Summary)****Program #16****1. Name of the Planned Program**

Commercial Horticulture

**2. Brief summary about Planned Program**

This program supports the major components of this industry: commercial fruit and vegetable growers, landscape services, nursery/greenhouse production and distribution, and florists. Within the nursery sector, there are also three basic activities: production of plant materials, wholesale distribution and retail distribution of nursery products. Research to develop new varieties and to support the commercial horticulture industry ranges from basic to applied. The Extension/outreach component of this planned program engages and serves a diverse audience of growers who raise and sell fruits and vegetables for profit. Production systems include the employment of organic, conventional and integrated crop management strategies. Extension programs in nursery and plant health deliver information regarding plant health and growth to members of the green industry and related industries. Another program in this area connects the nationally recognized and leading apiculture research at the University with commercial and hobby beekeepers.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	40%		40%	
205	Plant Management Systems	40%		40%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

Commercial horticulture and the green industry are some of the fastest growing segments of Minnesota's agricultural economy. Commercial growers and turf and nursery professionals continue to seek new research information and educational opportunities to refine their production practices, to increase profitability, reduce inputs, and protect natural resources.

Minnesota's cold climate make conditions for growth of horticultural product challenging. Research and education will continue to reach the horticulture industry with new products and management practices that assure success.

**2. Scope of the Program**

- Multistate Extension
- In-State Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension
- Multistate Research
- In-State Research

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

Minnesota's unique and difficult climate for fruit and vegetable growers and ornamental nurseries make it essential that we undertake research specific to our geographic conditions. Though challenging, there is also enormous potential in this endeavor, and growers in Minnesota rely on the University of Minnesota's research and Extension services.

Regarding Extension programming, exploring new audiences is important to the sustainability of this work. Continued growth in the numbers of small-scale commercial growers is anticipated in the next three years. This group is usually not trained in agricultural disciplines, but often has experience in business, framing the needs and expectations of this clientele group.

**2. Ultimate goal(s) of this Program**

Extension goals:

- To enhance the profitability of fruit and vegetable production, maintain food security, increase the potential of locally-grown food sources, and add value while maintaining the sustainability of the vegetable and fruit crop industry in Minnesota.

Research goals:

- To develop nursery products that enhance the ethical and economic progress of the industry. •To improve nursery products and techniques. •To develop new technologies and strategies that increase profitability while minimizing the environmental impact from urban agriculture. •To develop new turfgrass varieties and management practices for turfgrass.
- To research cultivars/rootstocks and cultural systems that improve production efficiency and promote sustainability •To research post harvest handling practices that improve crop use and product safety.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	8.1	0.0	39.8	0.0
2010	8.1	0.0	39.8	0.0
2011	8.1	0.0	39.8	0.0
2012	8.1	0.0	39.8	0.0
2013	8.1	0.0	39.8	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

MAES research will be conducted that will achieve the goals outlined under "Ultimate Goals," including discovery and development research.

Extension activities will include:

- Organize, coordinate and participate in events that assist us in reaching the commercial horticulture industry, including (but not limited to) The Potato Growers Association conference, Beginning Grower workshops, Farmers Markets workshops, turfgrass professional workshops, High tunnel workshops, International Crop Expo, Midwest Apple Growers Association conference and field day, MN Fruit and Vegetable Growers Association conference and field day, North Country Small Fruit and

Vegetable Schools, and Research and Outreach Center Horticulture Days.

•Produce online information and websites. •Work through the Minnesota Landscape Association to to produce shows on nursery and plant health and pesticide recertification.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Group Discussion</li> <li>● Demonstrations</li> <li>● Workshop</li> </ul>	<ul style="list-style-type: none"> <li>● Other 2 (local newspapers)</li> <li>● Other 1 (radio programs)</li> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**3. Description of targeted audience**

The audiences are fresh market producers including growers of fruits and vegetables for processing, the processing industry, associated agribusinesses turf professionals, nurseries and garden centers, and landscape professionals. Several of these groups have high representations of new immigrants.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	19000	18500	175	0
2010	19100	18500	180	0
2011	19200	18500	185	0
2012	19300	18500	190	0
2013	19400	185000	195	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :2                      2010 :2                      2011 :2                      2012 :2                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	32	0	0
2010	32	0	0
2011	32	0	0
2012	32	0	0
2013	0	0	0

**V(H). State Defined Outputs**

**1. Output Target**

- Deliver workshops, classes and seminars and other events to provide information to targeted audiences.

**2009** :130

**2010** :135

**2011** :140

**2012** :145

**2013** :150

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Participants of the Commercial Horticulture program workshops/classes and conferences will achieve significant learning gains regarding research-based horticulture knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Commercial Horticulture program workshops/classes and conferences.)
2	Participants of the Commercial Horticulture program workshops/classes and conference sessions intended to improve participant horticulture practices will significantly improve their horticulture practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their horticulture practices as a result of attending workshops/classes and conference sessions intended to improve horticulture practices.)

**Outcome #1****1. Outcome Target**

Participants of the Commercial Horticulture program workshops/classes and conferences will achieve significant learning gains regarding research-based horticulture knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Commercial Horticulture program workshops/classes and conferences.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 :70                      2010 : 72                      2011 : 74                      2012 :76                      2013 :78

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

**Outcome #2****1. Outcome Target**

Participants of the Commercial Horticulture program workshops/classes and conference sessions intended to improve participant horticulture practices will significantly improve their horticulture practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their horticulture practices as a result of attending workshops/classes and conference sessions intended to improve horticulture practices.)

**2. Outcome Type :** Change in Action Outcome Measure

2009 :55                      2010 : 57                      2011 : 59                      2012 :61                      2013 :63

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Competing Programmatic Challenges
- Economy
- Public Policy changes
- Competing Public priorities
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)
- Appropriations changes

**Description**

This program is sensitive to the changing demographics of Minnesota, which is bringing new immigrants into the workforce. It is also sensitive to competition from other growing areas with transportation advantages, to changing expectations and demands of consumers, and the increasing interest especially of urban consumers in local and organic produce, which both increases

demand for products and increases expectations and demand for quality products.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Case Study
- During (during program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention
- Comparisons between program participants (individuals,group,organizations) and non-participants
- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

#### **Description**

Partition survey data by commodity, percent of income due to vegetable and fruit farming, years of experience, etc, to gain a better understanding of needs of each commodity group.

### **2. Data Collection Methods**

- Case Study
- Observation
- Sampling
- On-Site

#### **Description**

{NO DATA ENTERED}

**V(A). Planned Program (Summary)**

**Program #17**

**1. Name of the Planned Program**

Livestock

**2. Brief summary about Planned Program**

This program includes a wide range of programming related to beef, swine, poultry, dairy cow and horse. It also includes work on animal facilities, pasture and manure management.

Animal production strategies, research development and niche markets are rapidly changing. In response, research and extension programming related to this planned program is flexible, applicable and adapts to audiences needs. The livestock industry is in the midst of major structural changes. Issues such as animal identification, disease surveillance, biosecurity, profitability, food safety and quality and the impacts of international markets are identified throughout all facets of the industry. This program is focusing on inclusion of new partnerships in educational delivery, regionalization and multi-state efforts to provide new resources and opportunities.

**3. Program existence :** Intermediate (One to five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	10%		10%	
302	Nutrient Utilization in Animals	15%		15%	
304	Animal Genome	5%		5%	
305	Animal Physiological Processes	10%		10%	
306	Environmental Stress in Animals	5%		5%	
307	Animal Production Management Systems	30%		30%	
311	Animal Diseases	20%		20%	
315	Animal Welfare, Well-Being and Protection	5%		5%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

Minnesota livestock producers are challenged with integrating knowledge from diverse disciplines into production practices suitable for their individual operation. Research and education on animal production systems must address the interactions between nutrition, genetics, reproduction, physiology, microbiology, immunology, and molecular biology, and also related effects on animal health, productivity, and impacts to the environment. In Minnesota, large amounts of land (including 2,000,000 acres of conservation reserve land) are suited for beef cow/calf operations, but the cost of production is high due to feed costs and inefficient use of available forage. Research is needed to develop grazing and forage systems to reduce feed costs and improve profitability. Minnesota is the nation's sixth largest milk-producing state and has the largest turkey industry in the nation.

#### 2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension
- Multistate Integrated Research and Extension
- Multistate Research
- Multistate Extension

**V(D). Planned Program (Assumptions and Goals)****1. Assumptions made for the Program**

The major livestock categories--poultry, swine, beef, and dairy cows--share similar challenges. All face the challenge of minimizing production costs while supplying high quality product to consumer markets. Consumers are indicating a preference for high protein meat, lower fat products, convenience, product variety and high quality taste. Livestock producers must respond to these demands. One recent survey indicated producers prefer easily accessible information, such as short publications and internet/web based offerings. Local programs were preferred over travel to other locations. Disease/health remains a high priority topic.

**2. Ultimate goal(s) of this Program**

The ultimate goal is to assure a thriving livestock industry. To accomplish this:

Research goals are:

- To improve production efficiency.
- To increase research on lean growth and alternative animal products for consumer driven markets.
- To evaluate alternative feeds and feeding and management strategies to improve economic efficiency.
- To determine nutrient requirements to enhance economic and environmentally sustainable animal products. To improve definition of dietary nutrient needs for food animals.
- To identify major animal genes that affect growth and development, reproductive performance, lactation, and disease resistance characteristics.
- To identify biotechnology that would assist producers in their efforts to accelerate the genetic improvement of animals.

Extension goals are:

- To reduce economic loss related to animal disease, environmental factors, and stress
- To educate consumers and youth regarding animal production and products
- To develop animal feeding strategies considering nutrient use and alternative ingredients
- To increase understanding of animal management and disease.
- To complete applied research to support extension efforts in animal nutrition, production, health, processing and food safety.

**V(E). Planned Program (Inputs)****1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2009	10.2	0.0	49.5	0.0
2010	10.2	0.0	49.5	0.0
2011	10.2	0.0	49.5	0.0
2012	10.2	0.0	49.5	0.0
2013	10.2	0.0	49.5	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

MAES research will be conducted to achieve the goals outlined under "Ultimate Goals.

Extension activities will:

- Provide direct education via regional and local programs.
- Offer train the trainer opportunities.
- Use media, websites, on-line educational delivery systems, listserves, audio-conferencing and other technologies to offer extension education to a diverse audience.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 1 (train the trainer)</li> <li>● Group Discussion</li> <li>● Workshop</li> <li>● Other 2 (listservs, Breeze Live-web)</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Web sites</li> <li>● Other 1 (MN Farm Information Line)</li> <li>● Newsletters</li> </ul>

**3. Description of targeted audience**

Minnesota dairy producers, pork producers, poultry producers, beef producers, veterinarians, consumers, Minnesota feed industry. Forage growers and feeders, and commercial hay producers.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	37900	3800	0	0
2010	37800	3800	0	0
2011	37700	3800	0	0
2012	37600	3800	0	0
2013	37500	38000	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :1                      2010 :1                      2011 :1                      2012 :1                      2013 :1

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	80	10	35
2010	80	10	35
2011	80	10	35
2012	80	10	35
2013	0	10	35

**V(H). State Defined Outputs**

**1. Output Target**

- Through demonstration projects, provide ideas and solutions to producers on such topics as milk house waste, manure rate application on fields, and on-farm demonstrations of forage topics such as alfalfa brown root rot variety screening, and

alfalfa fall cutting. (Target expressed as number of demonstration projects.)

<b>2009</b> 20	<b>2010</b> 20	<b>2011</b> :20	<b>2012</b> 20	<b>2013</b> 20
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- Provide workshops, training sessions, schools, and other processor specific events. (Target expressed as number of events.)

<b>2009</b> 350	<b>2010</b> 340	<b>2011</b> :330	<b>2012</b> 320	<b>2013</b> 310
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- The Quality Count\$ initiative will sustain its cooperative partnerships with regulatory, association and production groups that assist in addressing the issue of somatic cell count. (Target expressed as the minimum number of groups involved.)

<b>2009</b> 25	<b>2010</b> 25	<b>2011</b> :25	<b>2012</b> 25	<b>2013</b> 25
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**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Through the Quality Count\$ program, the average bulk tank somatic cell count in Minnesota dairy operations will be maintained at a low level, and move downward over time through changed attitudes and improved consistency of dairy producers. (Target expressed as the somatic cell count under which Minnesota's dairy industry will stay.)
2	Participants of the Livestock program workshops/classes and conferences will achieve significant learning gains regarding research-based livestock knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Livestock program workshops/classes and conferences.)
3	Participants of the Livestock program workshops/classes and conference sessions intended to improve participant livestock practices will significantly improve their livestock practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their livestock practices as a result of attending workshops/classes and conference sessions intended to improve participant livestock practices.)

**Outcome #1****1. Outcome Target**

Through the Quality Count\$ program, the average bulk tank somatic cell count in Minnesota dairy operations will be maintained at a low level, and move downward over time through changed attitudes and improved consistency of dairy producers. (Target expressed as the somatic cell count under which Minnesota's dairy industry will stay.)

**2. Outcome Type :** Change in Condition Outcome Measure

<b>2009</b> 280000	<b>2010</b> : 250000	<b>2011</b> : 250000	<b>2012</b> 250000	<b>2013</b> :250000
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**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection

**Outcome #2****1. Outcome Target**

Participants of the Livestock program workshops/classes and conferences will achieve significant learning gains regarding research-based livestock knowledge and skills. (Target expressed as the percentage of participants who achieved significant learning gains as a result of attending Livestock program workshops/classes and conferences.)

**2. Outcome Type :** Change in Knowledge Outcome Measure

<b>2009</b> :74	<b>2010</b> : 75	<b>2011</b> : 76	<b>2012</b> 77	<b>2013</b> :78
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**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection

**Outcome #3****1. Outcome Target**

Participants of the Livestock program workshops/classes and conference sessions intended to improve participant livestock practices will significantly improve their livestock practices as a result of attending the program. (Target expressed as a percentage of participants that significantly changed one or more of their livestock practices as a result of attending workshops/classes and conference sessions intended to improve participant livestock practices.)

**2. Outcome Type :** Change in Action Outcome Measure**2009 :** 65**2010 :** 66**2011 :** 67**2012 :** 68**2013 :** 69**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 307 - Animal Production Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare, Well-Being and Protection

**V(J). Planned Program (External Factors)****1. External Factors which may affect Outcomes**

- Populations changes (immigration,new cultural groupings,etc.)
- Natural Disasters (drought,weather extremes,etc.)
- Competing Programmatic Challenges
- Other (Changing consumer preferences)
- Competing Public priorities
- Economy
- Appropriations changes
- Government Regulations
- Public Policy changes

**Description**

Pressures on this industry include shifts in consumer quality demands, biosecurity threats, increasing regulations on producers related to environmental concerns, urban and suburban development creating land use issues, energy expenses and global economics.

**V(K). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- Before-After (before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- After Only (post program)
- Time series (multiple points before and after program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

**Description**

Many evaluation components of this planned program include immediate evaluations to get feedback on events. For example, workshops are evaluated through end of session questionnaires but have also included follow up questionnaires mailed out at some interval after the workshop. Some specific areas have data bases that give evaluative information.For example the Dairy Herd Improvement Association provides somatic cell count summary reports of association member dairy herds.From that monthly data can be determine whether there are changes occurring in the industry.Similar cumulative data is available for milk plants.

## 2. Data Collection Methods

- Mail
- Tests
- Observation
- Case Study
- Whole population
- On-Site
- Sampling

### Description

see above

**V(A). Planned Program (Summary)**

**Program #18**

**1. Name of the Planned Program**

Renewable Energy

**2. Brief summary about Planned Program**

MAES will support research to investigate the potential of renewable energy resources. Much of the currently funded projects are focused on a range of opportunities related to biomass. However, research projects on other energy sources, such as wind and solar, as well as other sources that have not yet emerged, will be undertaken as the opportunities arise. This research will help determine the economic and policy issues related to renewable energy resources, as well as conduct needed basic and applied research on processes, materials, and techniques. It will be designed to help agricultural producers participate in the renewable energy industry by adding value to their products while at the same time improve rural economic development.

The goal of this Planned Program is to be a driver of a developing renewable energy industry, and provide the unbiased information needed to allow stakeholders and the public make thoughtful decisions about our country and state's energy future.

**3. Program existence :** New (One year or less)

**4. Program duration :** Medium Term (One to five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** Yes

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	0%		30%	
601	Economics of Agricultural Production and Farm Management	0%		30%	
605	Natural Resource and Environmental Economics	0%		30%	
610	Domestic Policy Analysis	0%		10%	
	<b>Total</b>	0%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

The U.S. has a goal of producing 20 percent of its transportation fuels from renewable sources, including biomass, by 2030. Minnesota has a law that will require utilities to use wind, sun and cleaner-burning fuels to produce a quarter of the state's electricity by 2025, a standard that advocates call among the most aggressive in the country. This is the kind of challenge for which the Land Grant University system was first created.

In the early 1980s, MAES funding helped build Minnesota's first ethanol research facility at one of its branch stations. At the same time Experiment station research and Extension outreach efforts focused on the economic potential of ethanol for rural communities and how they could take advantage of those opportunities. Today, there are broader opportunities for renewable energy, and an increasingly urgent need to explore them.

Research is needed to develop new methods to produce biofuels from waste biomass including forest and mill residues, agricultural crops and wastes, animal waste, livestock operation residues, aquatic plants, fast-growing trees and plants, and municipal and industrial wastes.

Other energy opportunities include studying other energy sources. For example, a current pilot project at the Research and Outreach Center at Morris, Minnesota, is using energy from wind to turn nitrogen from the air into ammonia, an important fertilizer.

## 2. Scope of the Program

- In-State Research
- Multistate Research

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

- As the U.S. seeks to reduce its dependence on petroleum products, demand for bio-based products will steadily increase.
- At the same time, unanswered questions about the impact of biofuels on greenhouse gas emissions, as well as the competition between food and fuel will increase the need for unbiased information and public research. The role of research in helping to inform the public and policy debate is critical.
- Many potential alternative energy sources are in the beginning development stages or as yet unknown. It will be important to be flexible and entrepreneurial in order to take advantage of emerging research opportunities.
- The direction of the renewable energy industry will be driven by innovation.
- Renewable energy research requires a system-wide focus, looking at not only efficient processes, but balancing natural resources, and examining its impact on climate change, water quality, and quality of life.

### 2. Ultimate goal(s) of this Program

- To build a new bio-based economic sector on the existing foundation of agriculture, forestry and natural resources.
- To understand and evaluate the economic impacts of adoption of renewable energy sources.
- To enlarge the understanding of Minnesotans in the opportunities and trade-offs in renewal energy strategies . (I am not sure I understand what you wanted to do with this statement, so the suggestion may not be helpful)
- To develop real science answers to known and as yet unknown questions.

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2009	0.0	0.0	23.5	0.0
2010	0.0	0.0	23.5	0.0
2011	0.0	0.0	23.5	0.0
2012	0.0	0.0	23.5	0.0
2013	0.0	0.0	23.5	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Researchers will engage in a wide range of research activities, including laboratory studies, experiments, field testing, prototype development, comparison studies, and economic analysis. Collaborative efforts will be necessary and will include cross-disciplinary studies and the involvement of private industries and other private and public stakeholders.

Some specific projects already known:

- Research on new uses for ethanol bioproducts, liquid fuels from biomass, and other energy crops for Minnesota.
- Research on ways to recover liquid fuel, gas, and other products from agricultural wastes.
- Research to develop farm scale prototypes for energy recovery and use.
- Research on altering lignin composition for bioprocessing of lignocellulosic feed stocks to biofuels and other products.
- Studies on the economic and environmental impacts of the emerging biofuels economy.

Researchers will:

- Publish the results of research in scientific journals and communicate research results in internal and external media.
- Present data at professional scientific regional, national and international conferences and symposia.
- Deliver science-based objective information to state, regional, national and international user groups.

Extension programming will be developed to take advantage of information generated by this research as it becomes available.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 1 (research)</li> </ul>	<ul style="list-style-type: none"> <li>● {NO DATA ENTERED}</li> </ul>

**3. Description of targeted audience**

Agriculture and natural resources industry representatives, biotechnology company representatives, policymakers, state and federal agency representatives, private citizens, and entrepreneurs.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0
2012	0	0	0	0
2013	0	0	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2009 :0                      2010 :0                      2011 :1                      2012 :1                      2013 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2009	0	25	0
2010	0	25	0
2011	0	25	0
2012	0	25	0
2013	0	25	0

**V(H). State Defined Outputs**

**1. Output Target**

- Graduate student research assistants

2009 :10                      2010 :10                      2011 :10                      2012 :10                      2013 :10

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Research will provide information on new uses for ethanol byproducts.
2	Research will provide information on technologies for use of on-farm energy sources.
3	Research will provide better understanding of the economic impact and environmental trade-offs of renewable energy sources.

**Outcome #1**

**1. Outcome Target**

Research will provide information on new uses for ethanol byproducts.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 0                      2010 : 0                      2011 : 0                      2012 0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management

**Outcome #2**

**1. Outcome Target**

Research will provide information on technologies for use of on-farm energy sources.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 0                      2010 : 0                      2011 : 0                      2012 0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management

**Outcome #3**

**1. Outcome Target**

Research will provide better understanding of the economic impact and environmental trade-offs of renewable energy sources.

**2. Outcome Type :** Change in Knowledge Outcome Measure

2009 0                      2010 : 0                      2011 : 0                      2012 0                      2013 : 0

**3. Associated Institute Type(s)**

•1862 Research

**4. Associated Knowledge Area(s)**

- 131 - Alternative Uses of Land
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics
- 610 - Domestic Policy Analysis

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Economy
- Public Policy changes
- Natural Disasters (drought,weather extremes,etc.)
- Competing Programmatic Challenges
- Appropriations changes
- Government Regulations
- Competing Public priorities

**Description**

The potential for biomass and other renewable energy sources will be developed within the context of Minnesota's agricultural and natural resources environment. It will also be developed within the larger, global world of increasing demand for energy from developing countries, as well as competing demands for food.

Public policy decisions will have an impact on how the potential of renewable energy sources will be developed, as well as governmental regulations relating not just to energy use and efficiencies, but to other public policy decisions and regulations relating to global warming, and environmental and water quality.

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- {NO DATA ENTERED}

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- {NO DATA ENTERED}

**Description**

{NO DATA ENTERED}